

KENWOOD

GRAPHIC EQUALIZER

GE-850

INSTRUCTION MANUAL

KENWOOD CORPORATION



# Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction. We appreciate your patronage and take pride in the long tradition of quality components that our company represents.

So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features and system-connection considerations so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability we have sought to anticipate your needs and desires.

**Keep this manual handy for future reference.**

### For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model \_\_\_\_\_ Serial Number \_\_\_\_\_

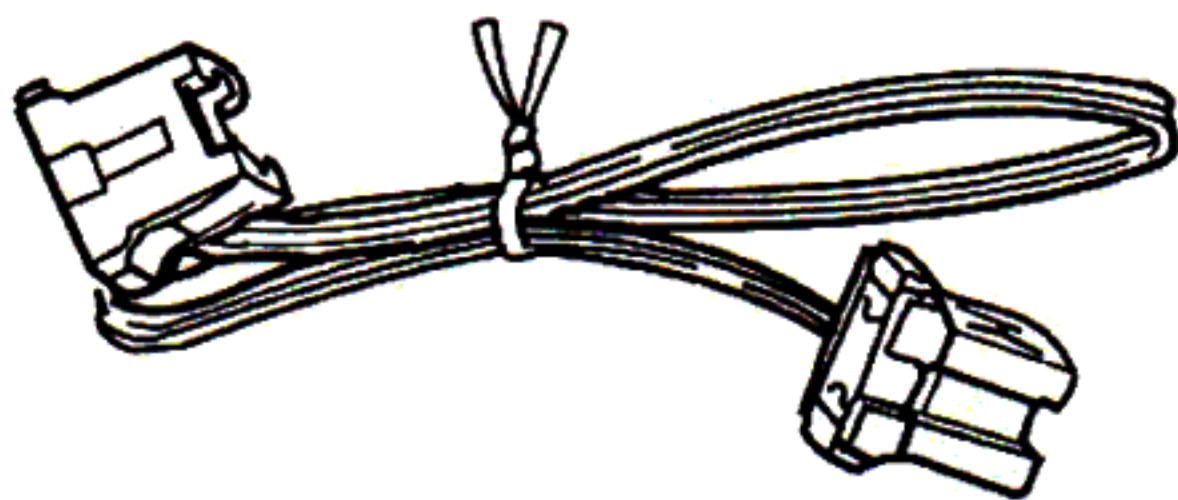
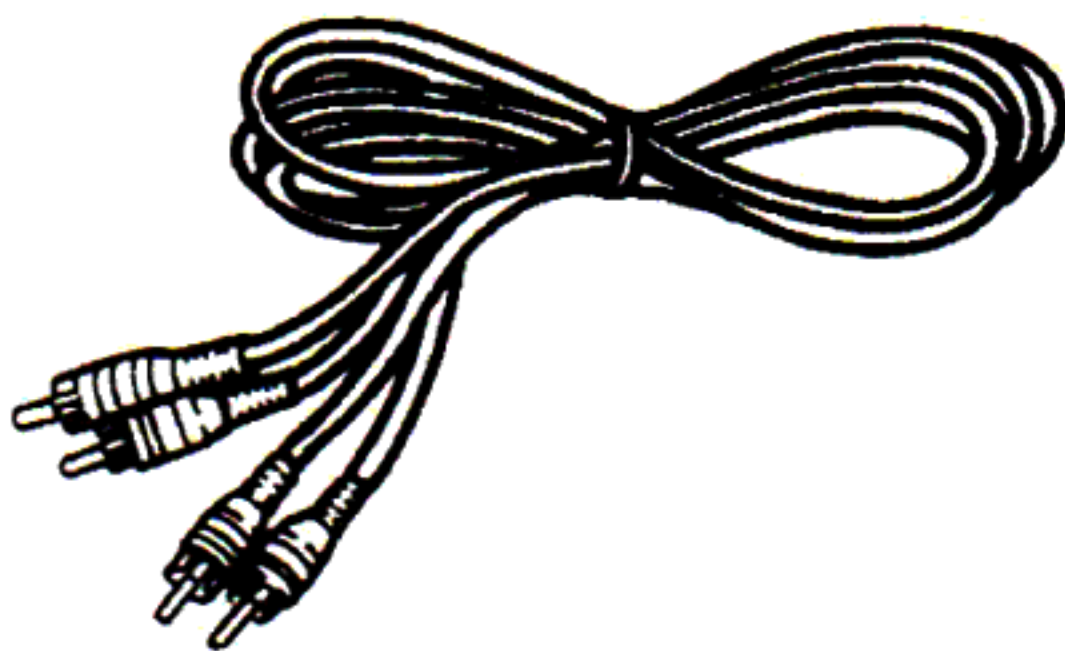
### Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost. Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

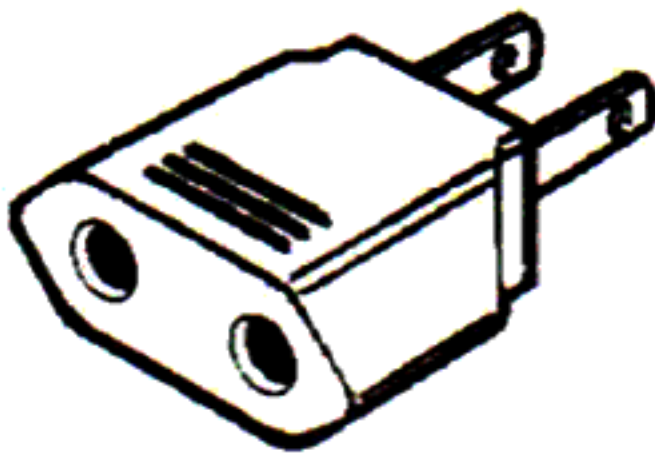
We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

### Accessories

Audio cord .....2      System control cord .....1



AC plug adaptor .....1  
(except for some areas)  
For the unit with a European AC  
plug in areas other than Europe.



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**Caution: Read the pages marked ! carefully to ensure safe operation.**

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# Before applying power

**! Caution:** Read this page carefully to ensure safe operation.

## For the U.S.A. and Canada

**Important!**

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

**CAUTION:** TO PREVENT ELECTRIC SHOCK DO NOT USE THE AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

## For the United Kingdom

**Important!**

Units shipped to the U.K. are designed for operation on 240 volts AC only.

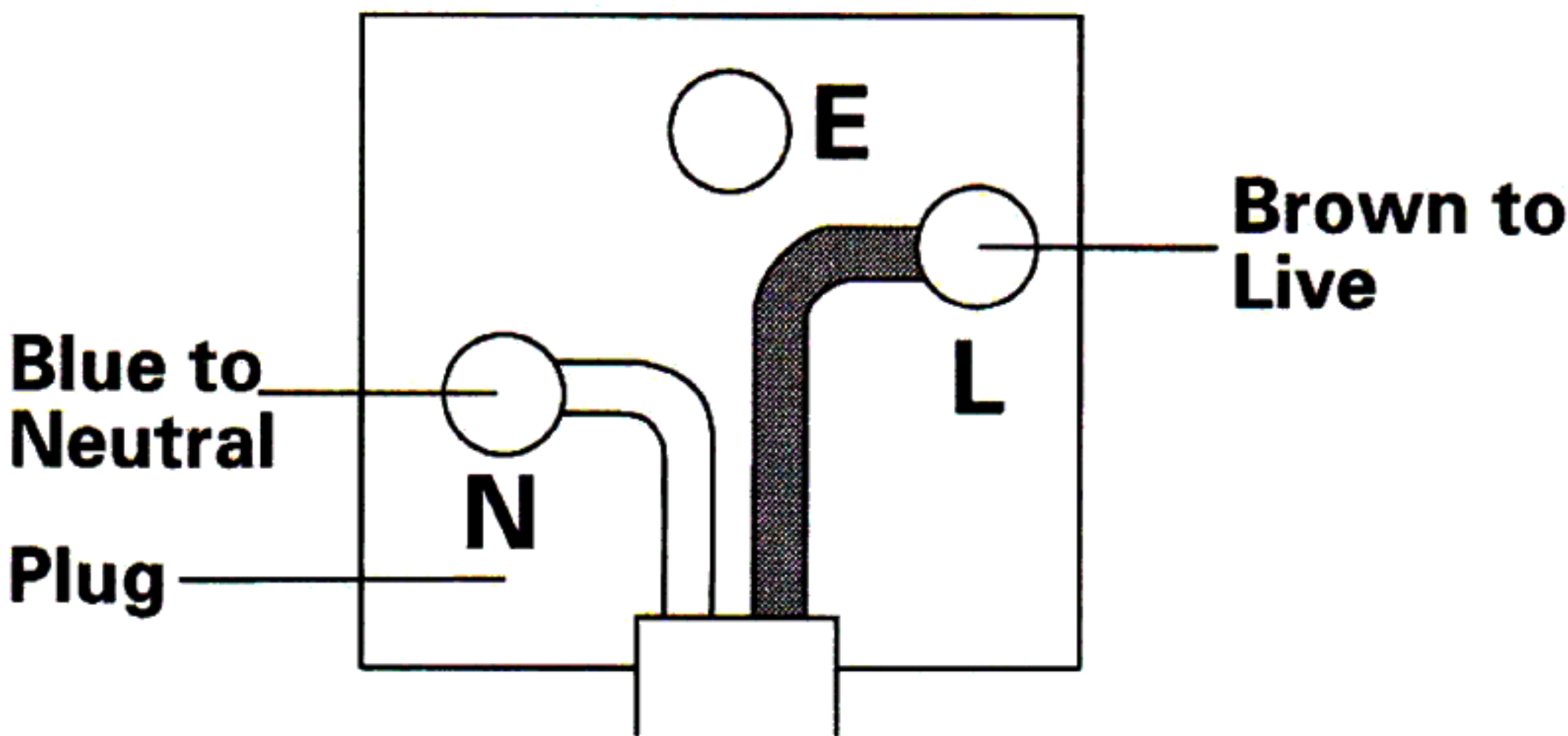
The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code.

Blue .....Neutral  
Brown.....Live

The wires in this mains lead must be connected to the terminals in the plugs as follows:

Wire colour	Plug terminal marking
Blue .....	N or Black
Brown.....	L or Red



- Notes:**
- 1. If a 13-amp plug is used, this must be fitted with a 5-amp fuse.
  - 2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

## For Australia and Europe

**Important!**

Units shipped to Australia are designed for operation on 240 V AC only.

Units shipped to Europe are designed for operation on 230 V AC only.

## For other countries

**Important!**

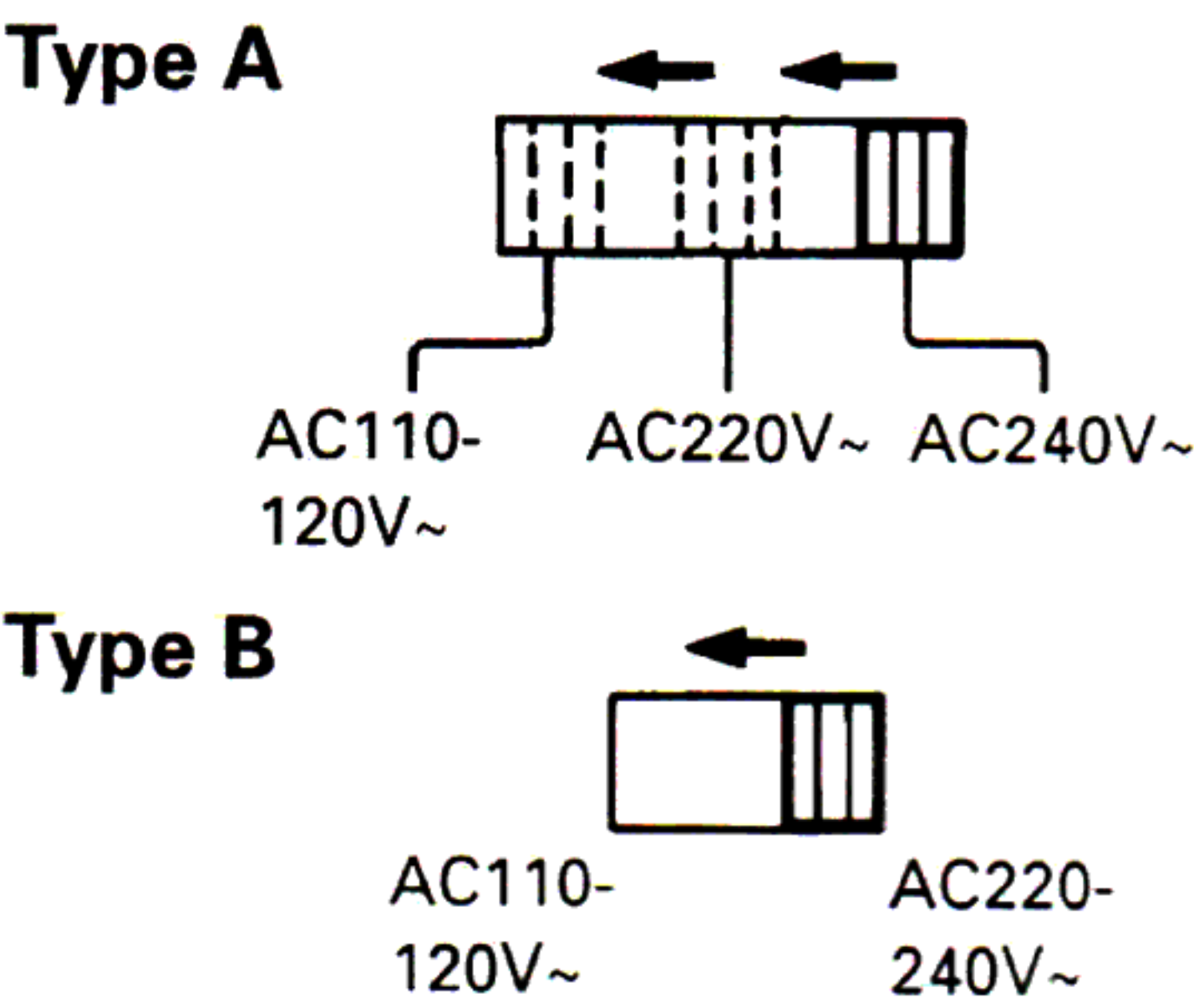
Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

### AC voltage selection

This unit operates on 110 – 120 or 220 – 240 volts AC. The AC voltage selector switch Type A or Type B on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

**Note:** Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

### AC voltage selector switch



Move switch lever to match your line voltage with a small screwdriver or other pointed tool.

# Safety precautions

**WARNING:** TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN		CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.		
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.		



# IMPORTANT SAFEGUARDS



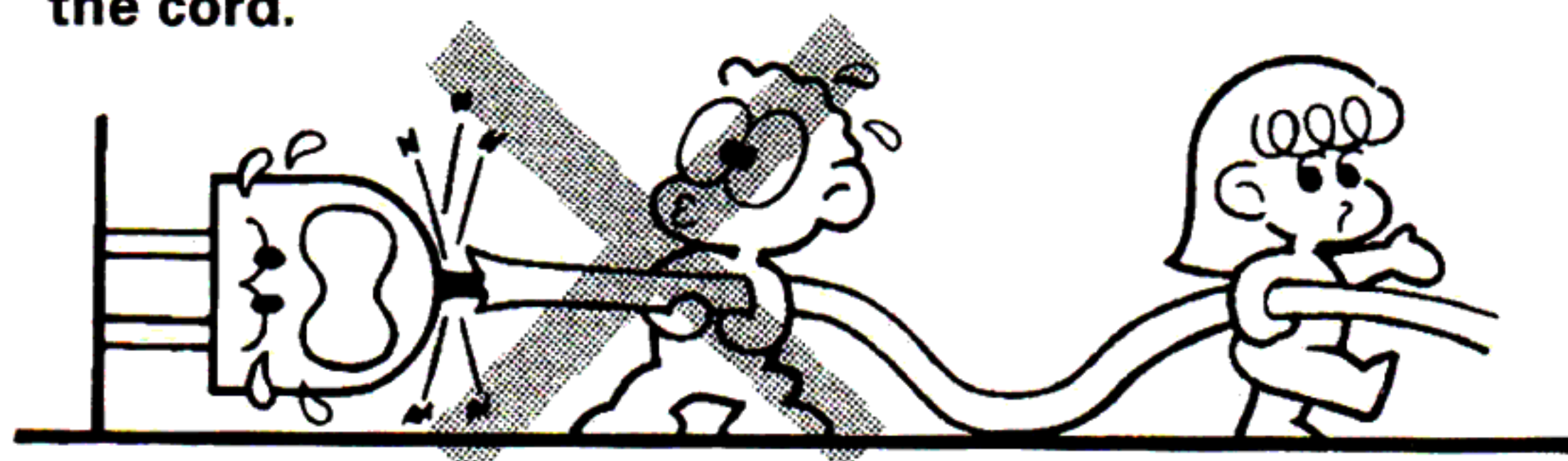
**Caution:** Read this page carefully to ensure safe operation.

Please read all of the safety and operating instructions before operating this unit. For best results, follow all warnings placed on the unit and adhere to the operating and use instructions. These safety and operating instructions should be retained for future reference.

1. **Power sources** — The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

2. **Power-cord protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

Never pull or stretch the cord.

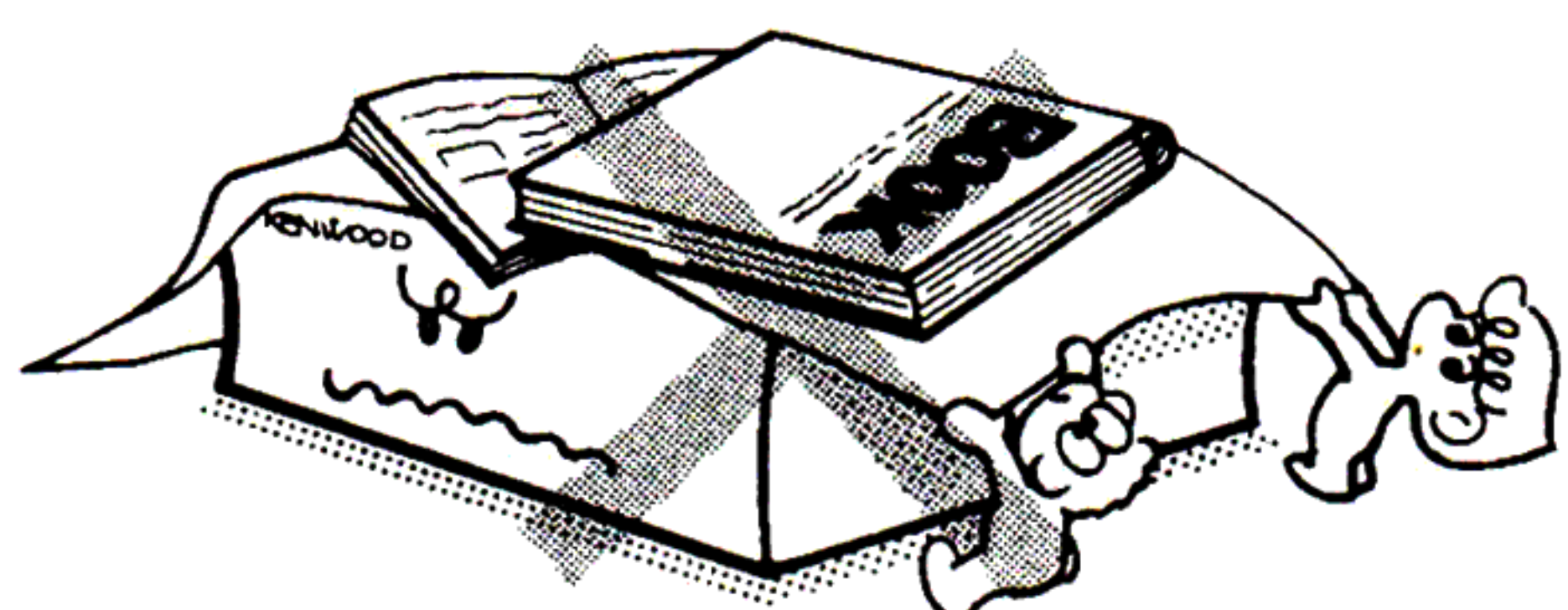


3. **Grounding or polarization** — The precautions should be taken so that the grounding or polarization means of this unit is not defeated.

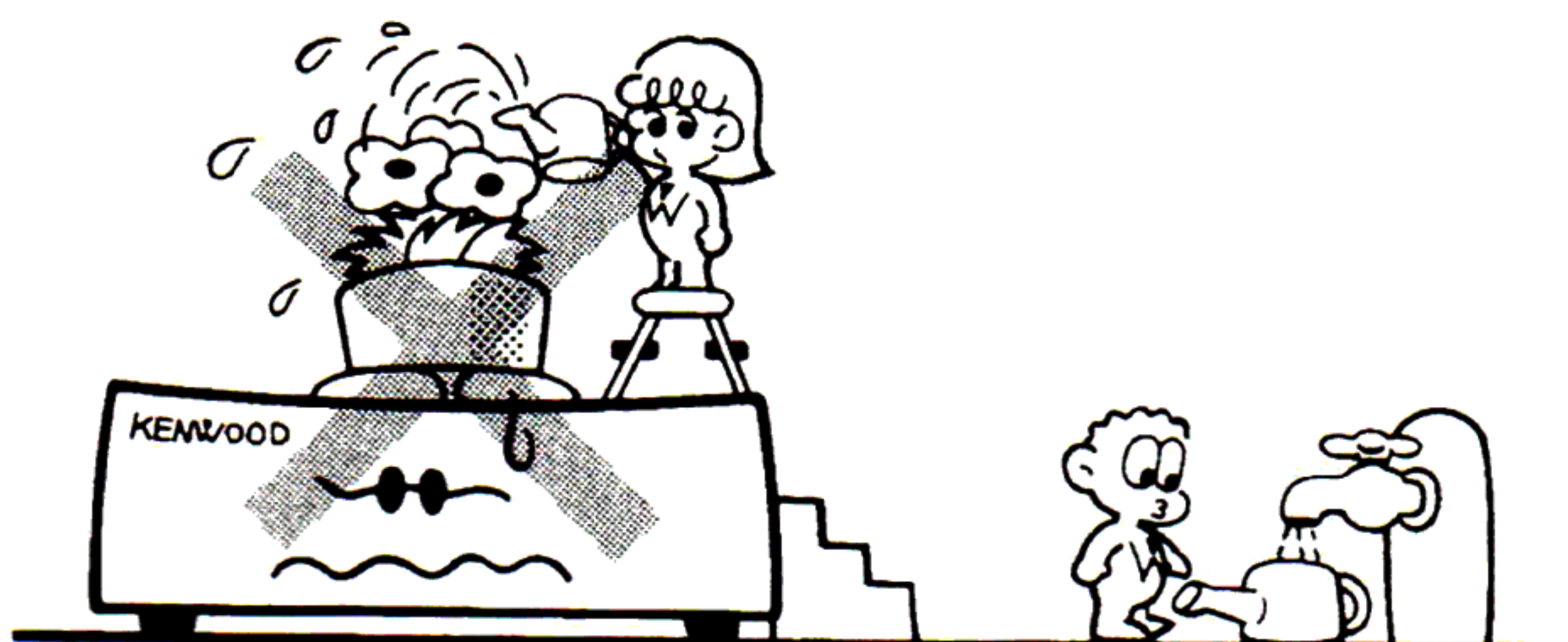
4. **Ventilation** — The unit should be situated so that its location or position does not interfere with its proper ventilation.

To maintain good ventilation, do not put records or a table-cloth on the unit. Place the unit at least 10 cm away from the walls.

Do not use the unit on a bed, sofa, rug or similar surface that may block the ventilation openings.

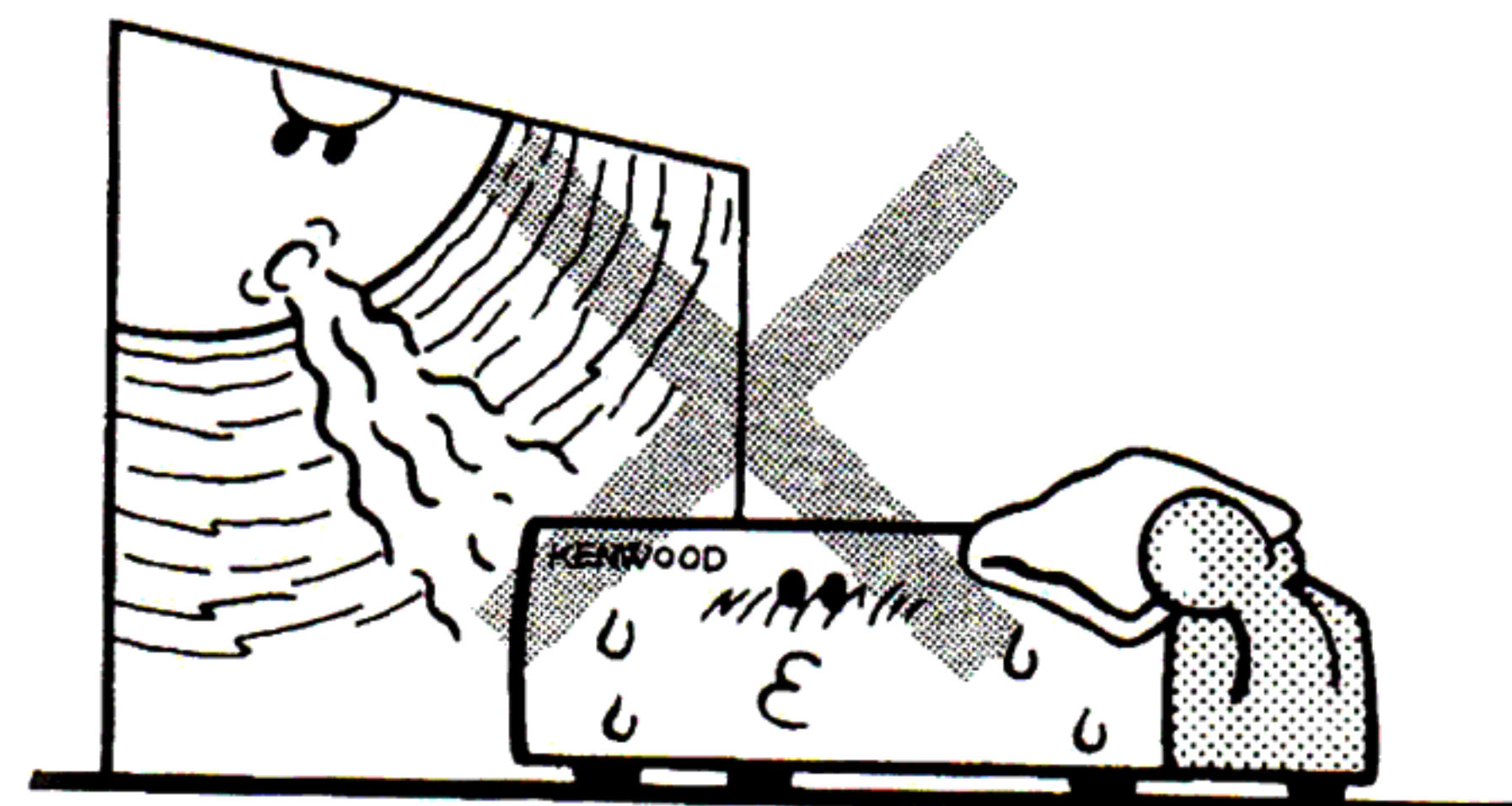


5. **Water and moisture** — The unit should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

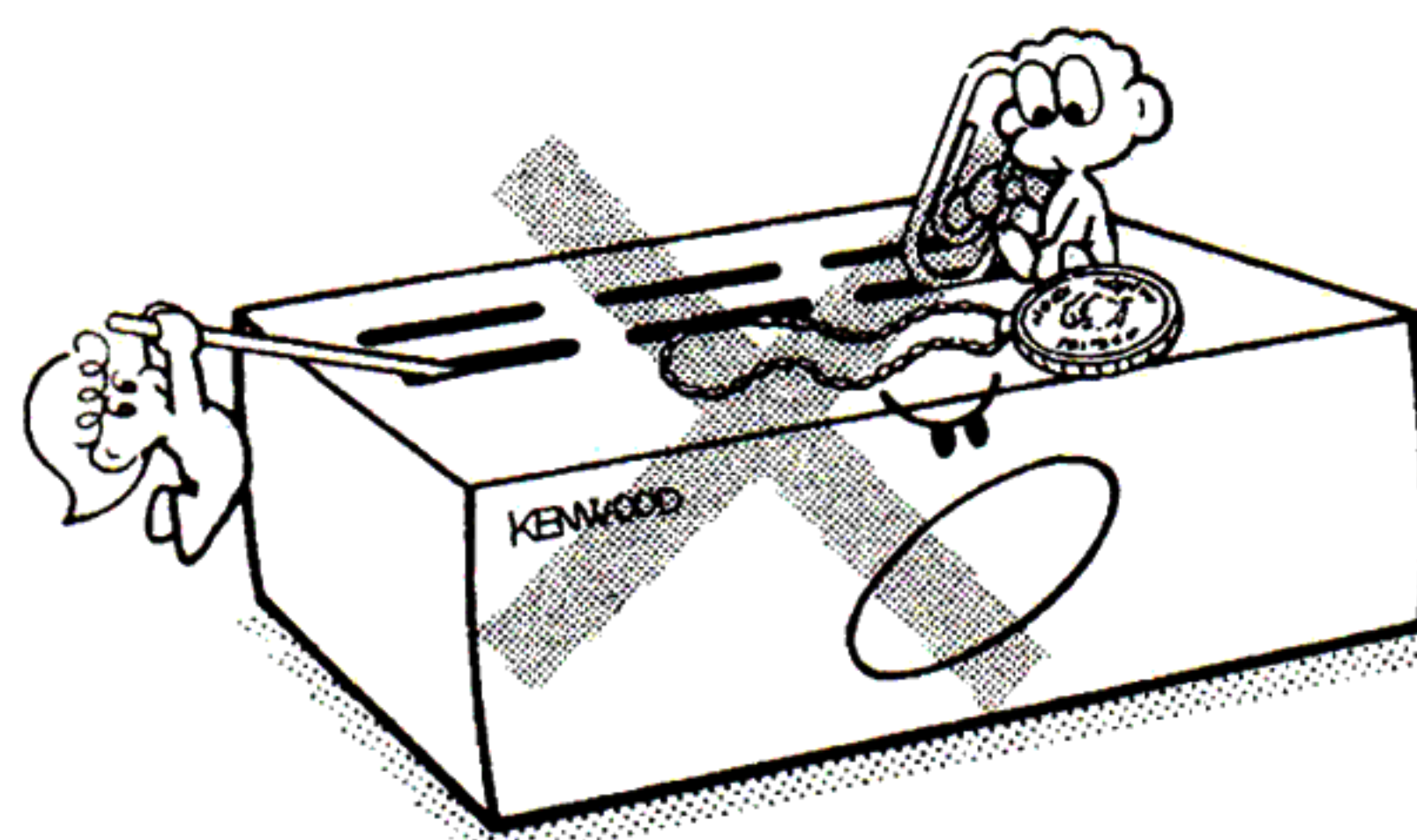


6. **Temperature** — The unit may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).

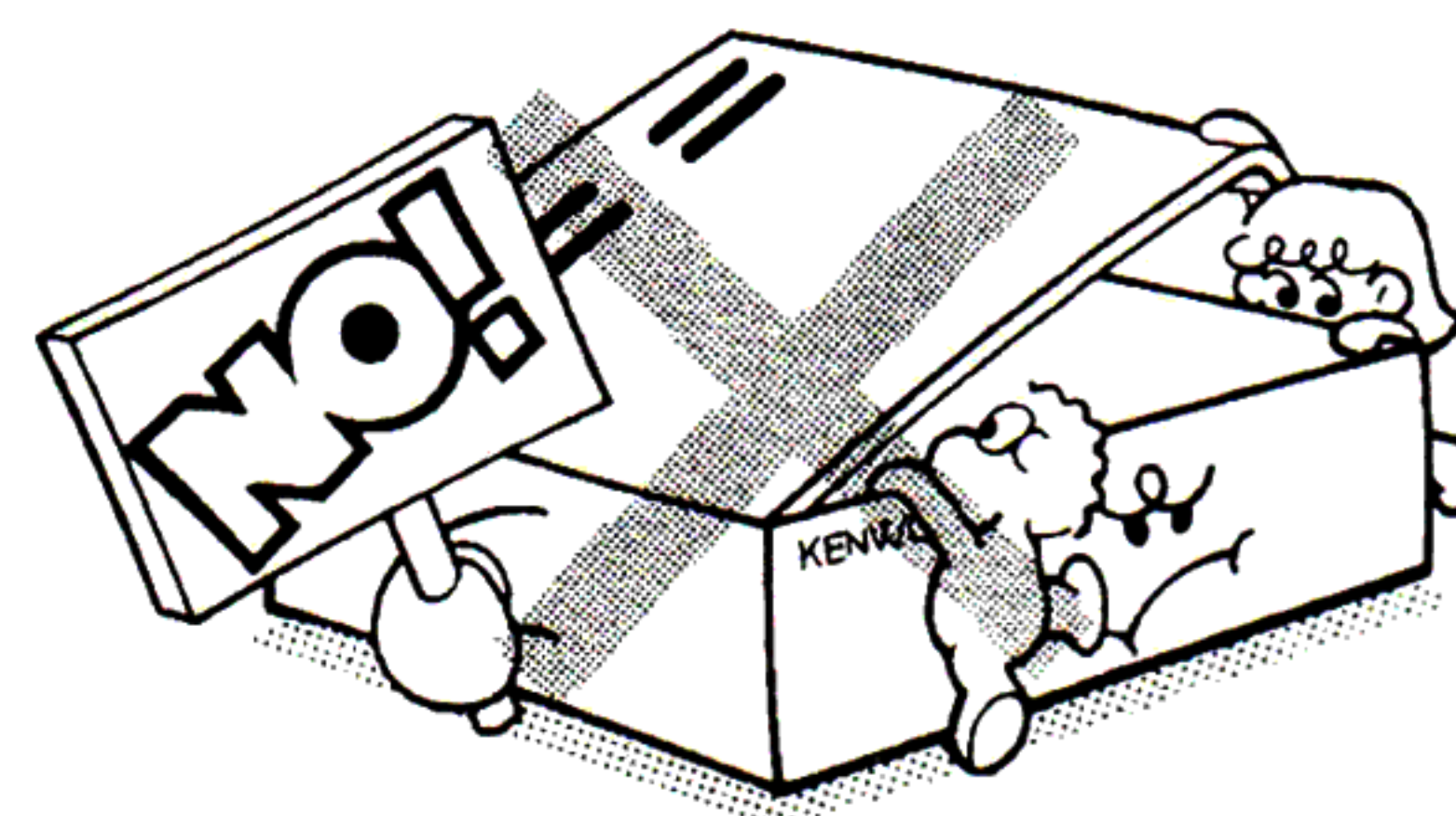
7. **Heat** — The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.



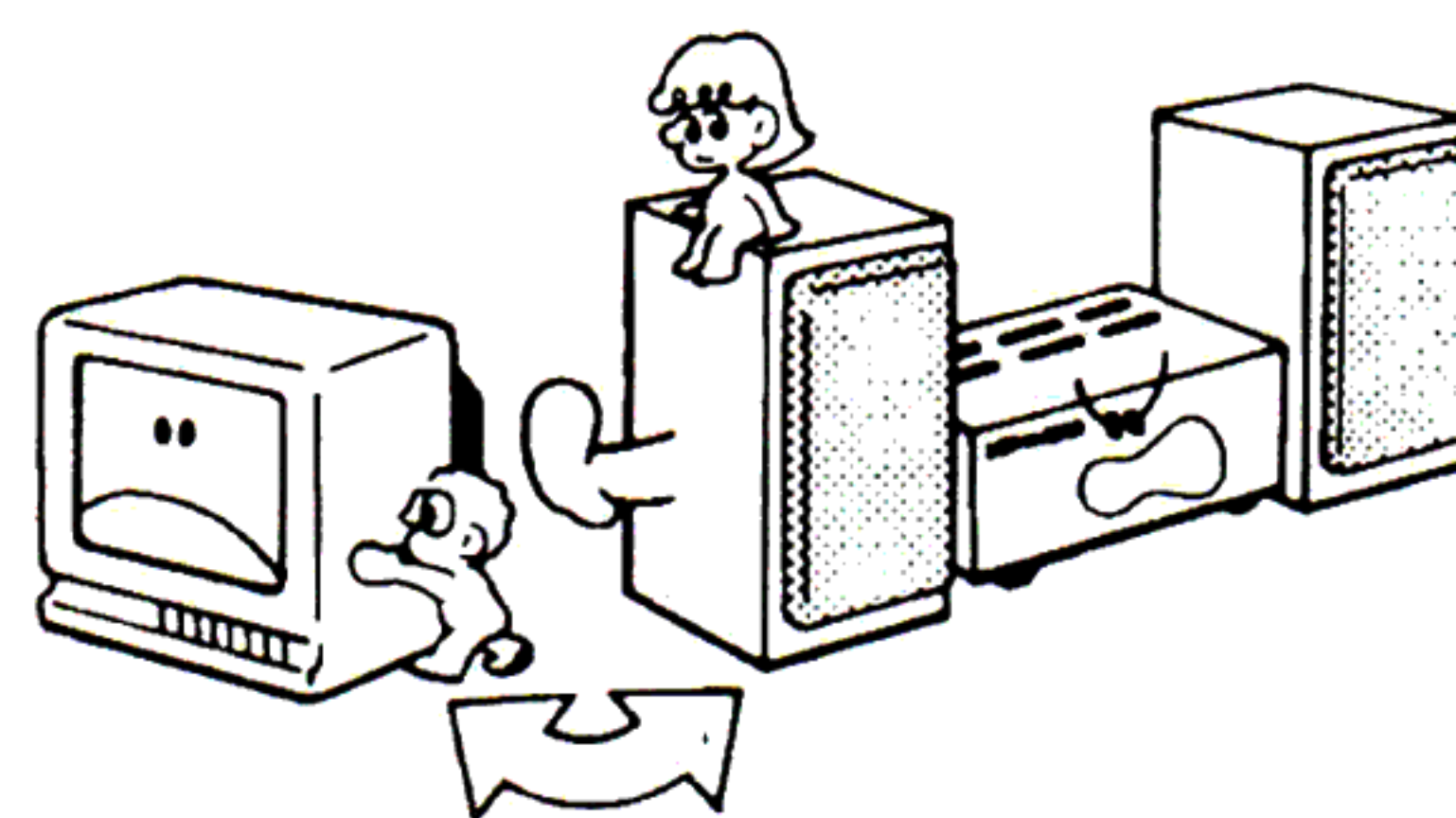
8. **Electric shock** — Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. If a metal object, such as a hair pin or a needle, comes into contact with the inside of this unit, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.



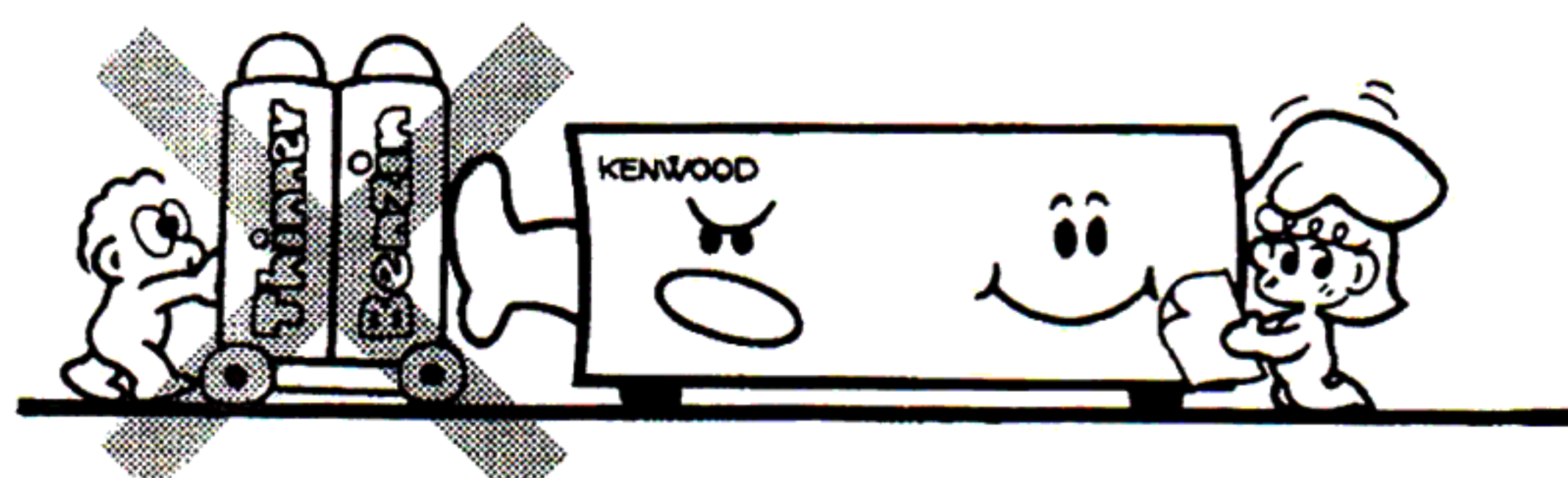
9. **Enclosure removal** — Never remove the enclosure. If the internal parts are touched accidentally, a serious electric shock might occur.



10. **Magnetic fields** — Keep the unit away from sources of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.



11. **Cleaning** — Do not use volatile solvents such as alcohol, paint thinner, gasoline, or benzine, etc. to clean the cabinet. Use a clean dry cloth.



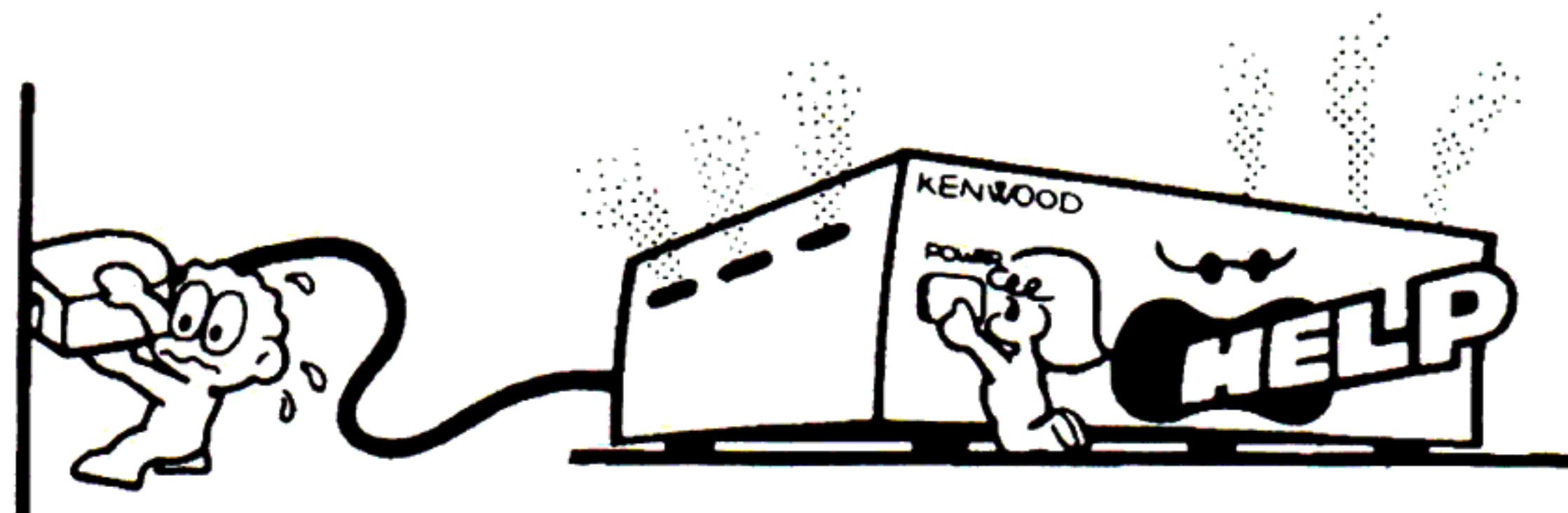


- 12. Carts and stands** — An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



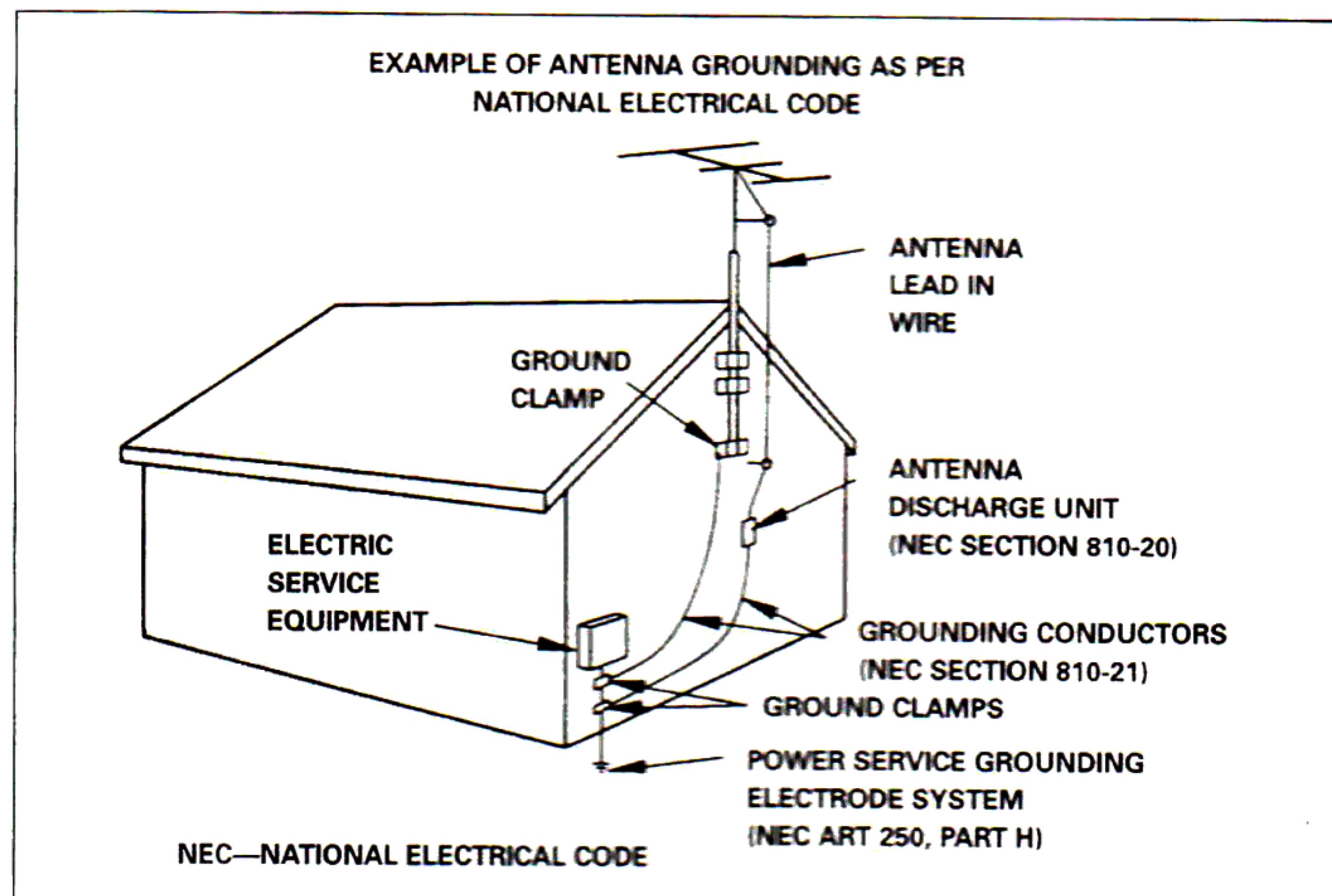
- 13. Nonuse periods** — The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.
- 14. Abnormal smell** — If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest service center.

**POWER OFF!**

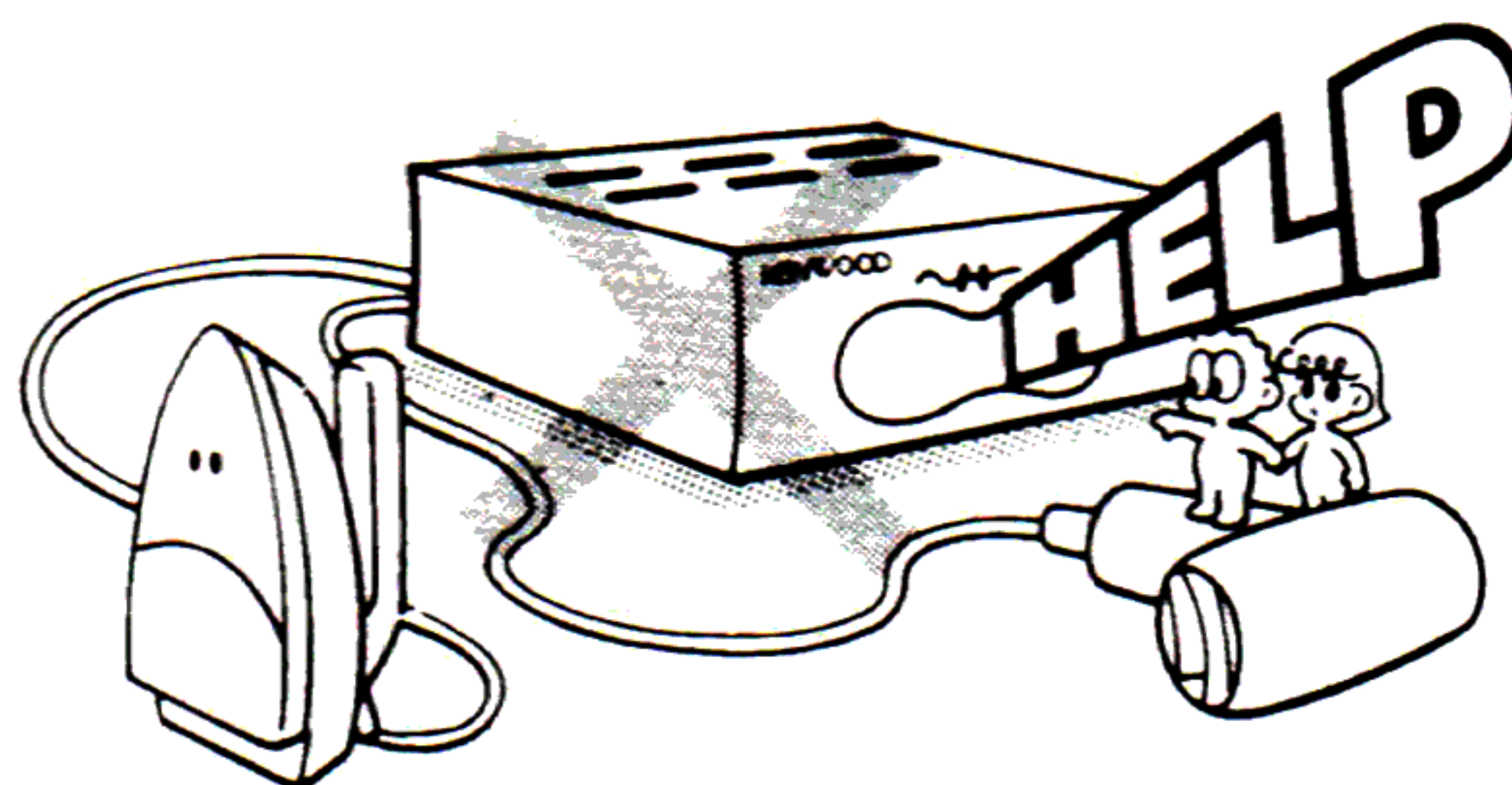


- 15. Damage requiring service** — The unit should be serviced by qualified service personnel when:
- A.** The power-supply cord or the plug has been damaged; or
  - B.** Objects have fallen, or liquid has been spilled into the unit; or
  - C.** The unit has been exposed to rain; or
  - D.** The unit does not appear to operate normally or exhibits a marked change in performance; or
  - E.** The unit has been dropped, or the enclosure damaged.
- 16. Servicing** — The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

- 17. Outdoor antenna grounding** — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.



- 18. Power lines** — An outdoor antenna should be located away from power lines.
- 19. AC outlets** — Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical units, such as an iron or toaster, to it to prevent fire or electric shock.



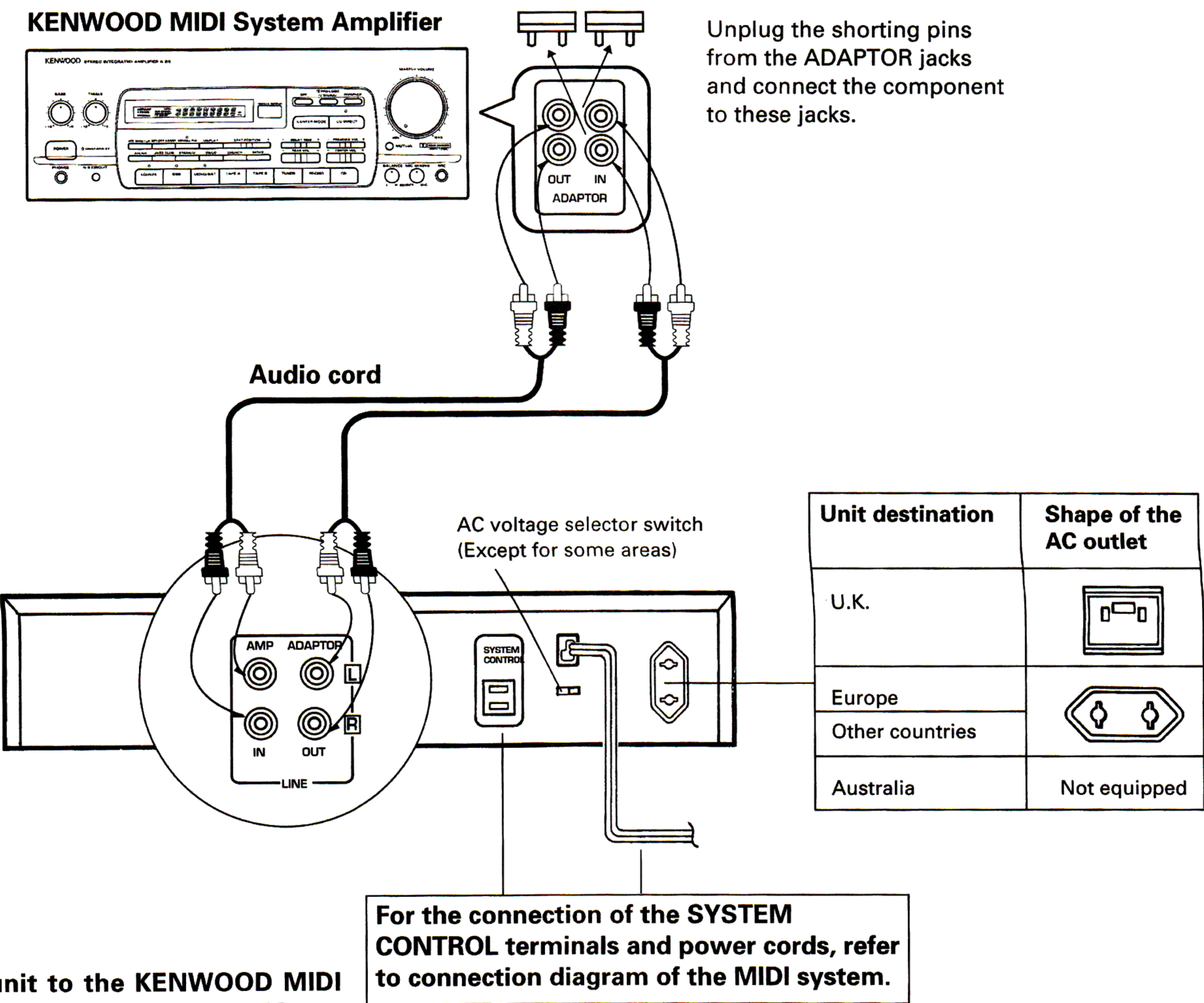
**Notes:**

- 1. Item 3 is not required except for grounded or polarized equipment.
- 2. Item 17 and 18 are not required except for units provided with antenna terminals.
- 3. Item 17 complies with UL in the U.S.A.



# System connections

Make connection as shown below. When connecting the related system components, refer also to the instruction manuals of the related components.  
Do not plug in the power lead until all connections are completed.



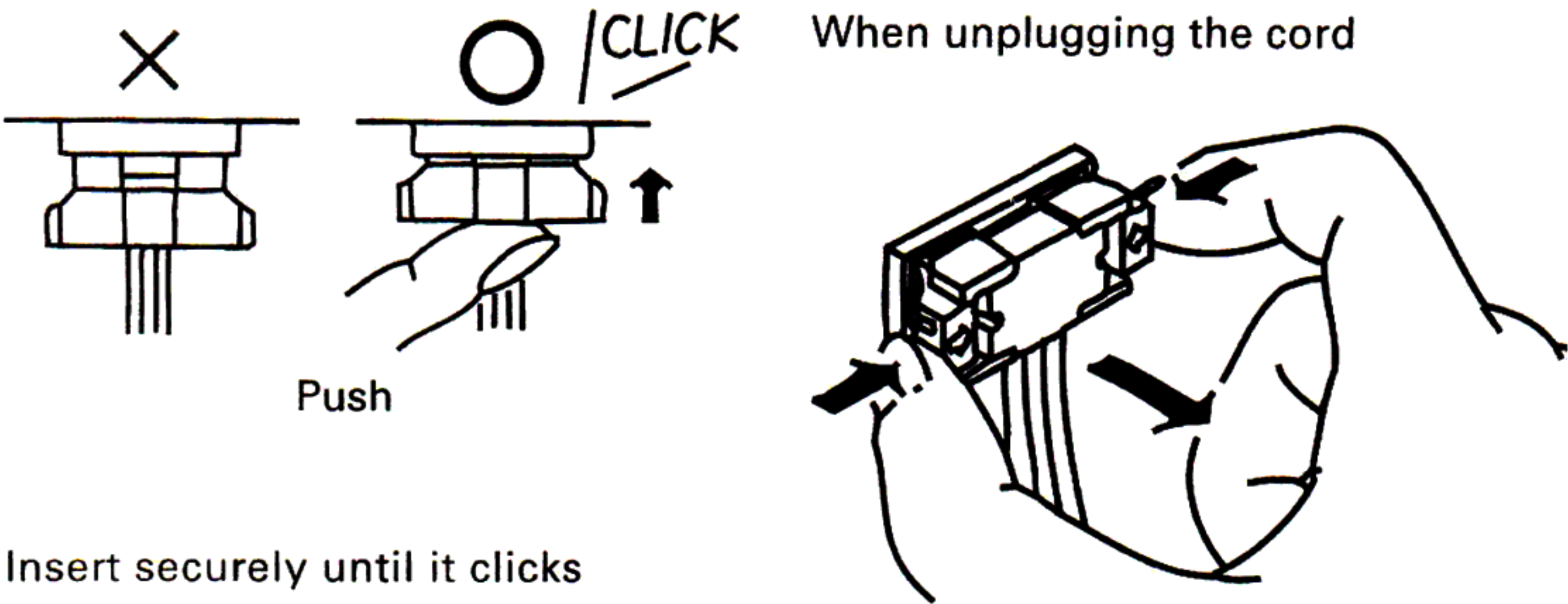
Connect this unit to the KENWOOD MIDI system, M-85, M-959, M-65 or M-858 with the system control cords as shown in the diagram.

## System control connection

When connected to the MIDI System, system operation such as remote control is made possible. For details, refer to the instruction manual of the MIDI System.

If your amplifier or receiver is not equipped with the SYSTEM CONTROL terminals, do not connect anything to any SYSTEM CONTROL terminal.

Do not connect the unit in any system configuration other than specified.

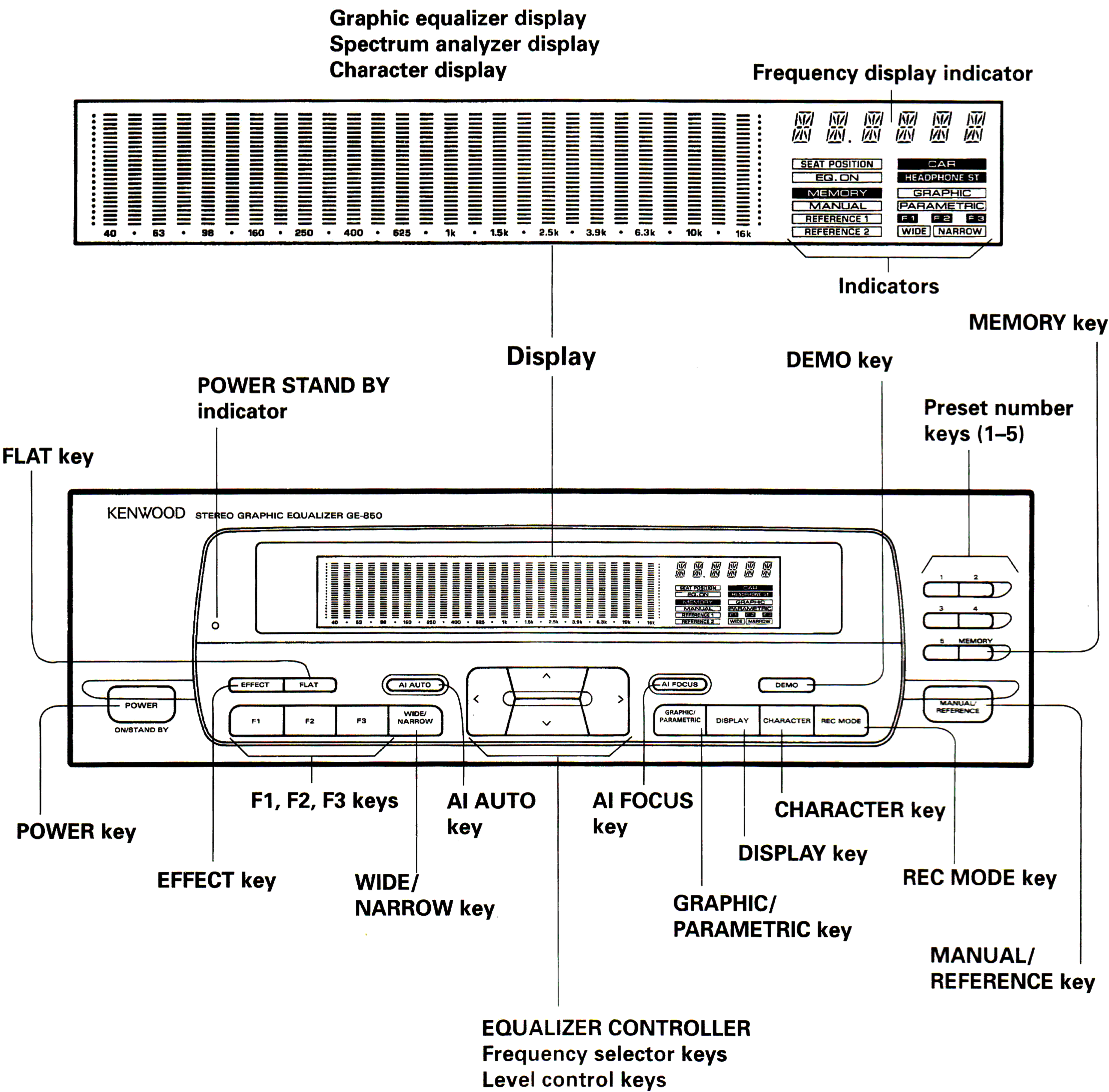


- Be sure to insert the system control cord plugs fully into the SYSTEM CONTROL terminals.
- If the system control cord and audio cords are not connected properly, the automatic system governing remote control and system functions will not operate.

- Notes:
1. Connect all cords firmly. If connections are loose, there could be loss of sound or noise produced.
  2. When plugging and unplugging connection cords, be sure to first remove the power cord from the AC outlet. Plugging/unplugging connection cords without removal of the power cord can cause malfunctions or damage to the unit.
  3. Do not connect up a power source which is larger than that indicated on the socket at the rear of the unit.

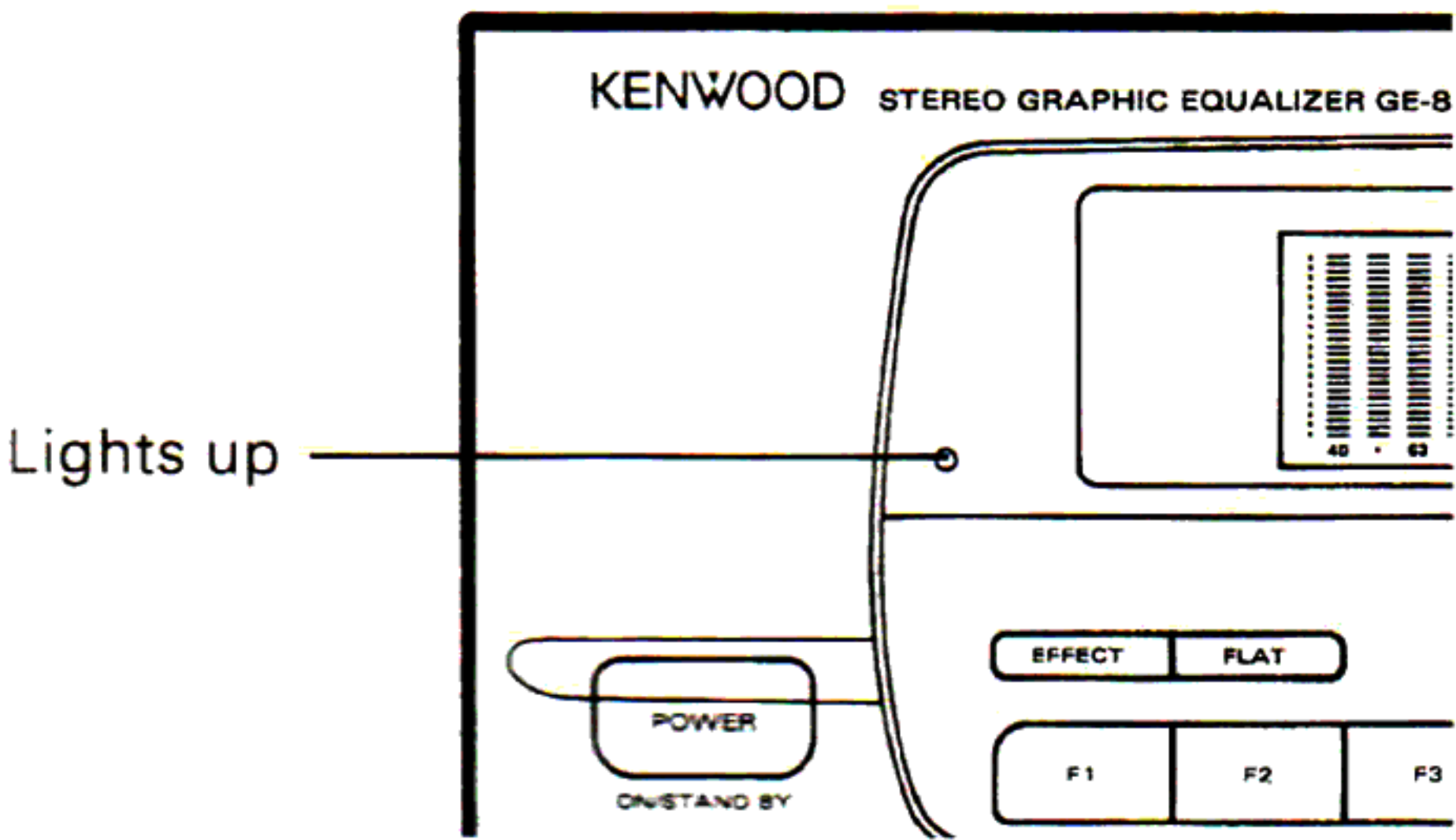


# Controls and indicators



## STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the STAND BY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Stand By mode.





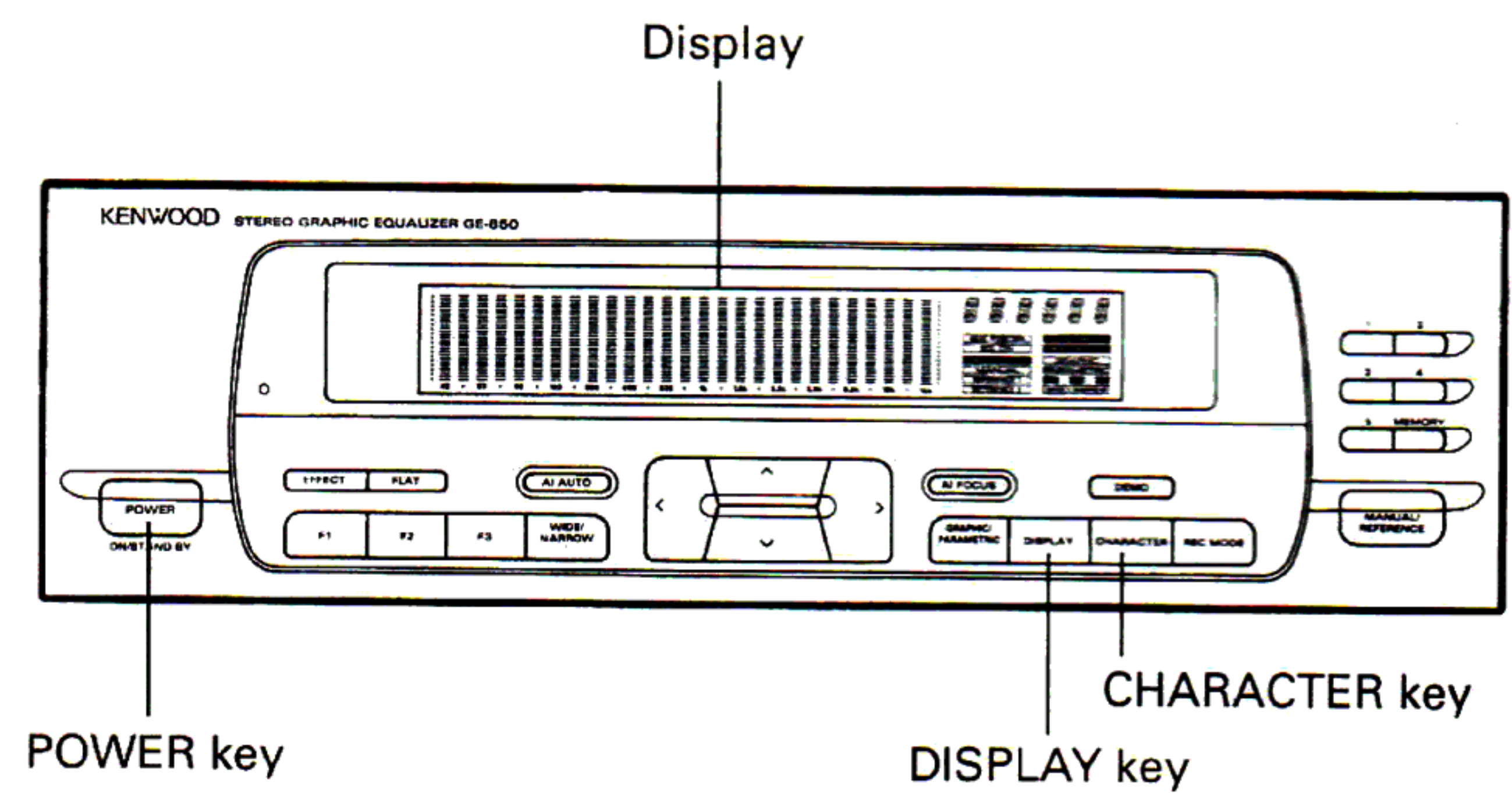
# Operation of graphic equalizer

This unit is a sophisticated graphic equalizer allowing detailed adjustment of the frequency bands. When this unit is connected to one of KENWOOD MIDI Systems M-85, M-959, M-65 and M-858 the tone suitable for each music source will be made available by the following AI (Artificial Intelligence) features.

- 1. DEMO (Demonstration)**  
Displays various equalizer curves visually in sequence together with the actual sound effect of each curve as audible demonstration.
- 2. AI-AUTO (available only for CD play)**  
Checks the contents recorded on a CD automatically, and sets the optimum equalizer pattern according to the CD.  
This feature is to be used when you need a simplified selection of playback equalizer pattern.
- 3. AI-FOCUS (available only for CD play)**  
Sets the optimum amplifier presence setting (DELAY TIME, PRESENCE VOL. = Volume of reverberations) and equalizer curve automatically according to each CD to create a feeling of presence (with the M-85 or M-959 system). With the M-65 or M-858 system, turns the Surround function on.
- 4. MANUAL/REFERENCE modes**  
REFERENCE: Ten exemplary patterns have been preset at the factory.  
MANUAL: Five preset patterns have been factory-preset for this mode, too. In this mode, it is also possible to preset (assign) equalizer patterns created by the user in place of the factory presets.
- 5. GRAPHIC/PARAMETRIC modes**  
PARAMETRIC: The equalizer curve can be adjusted in a simplified manner based on the low-, medium- and high-frequency ranges.  
GRAPHIC: The equalizer curve can be adjusted in a detailed way for every frequency range. It is also possible to fine-adjust a curve which has been created in the PARAMETRIC mode.  
The GRAPHIC mode is to be used when detailed adjustment of acoustic compensation is required.
- 6. CHARACTER**  
In the spectrum analyzer display mode, the level of the music being played and changes of frequency distribution with four different patterns and the animations are displayed.  
SPE. ANA      1: NORMAL      Normal spectrum analyzer display  
                 2: SHOWER      Reversed normal spectrum analyzer display with the normal peak hold levels display  
                 3: HORIZONTAL      Displays right and left levels with the frequency band in vertical axis and level in horizontal axis.  
                 4: SEE-THROUGH      Displays peak hold levels only.  
ANIMATION      Displays various patterns regardless of the frequency or level.
- 7. REC MODE (Pattern for recording)**  
Two patterns to be used in recording, "CAR" for playback on car stereo and "HEADPHONE ST." for playback on headphone stereo, are provided for easy recall.
- 8. Other (AI-LINK) (available with M-85/M-959 system only)**  
When the presence mode is selected on the amplifier, optimum equalizer curve for this mode is selected automatically to enhance the presence effect.

AI: Artificial Intelligence.      The AI is capable of adjusting the tone automatically according to the source and music categories.





## Contents of display

### Spectrum analyzer display

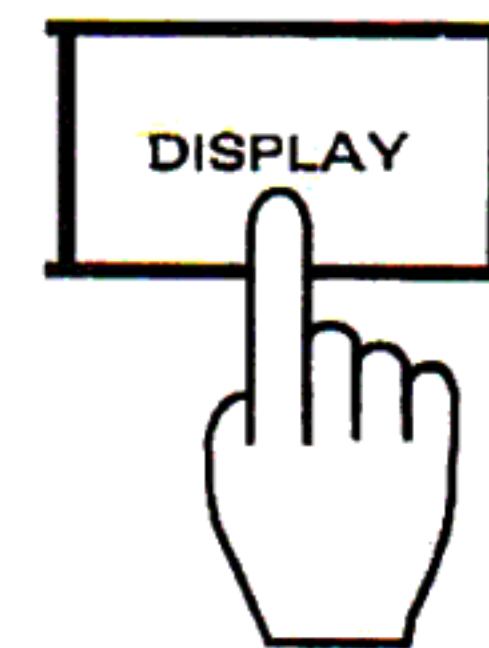
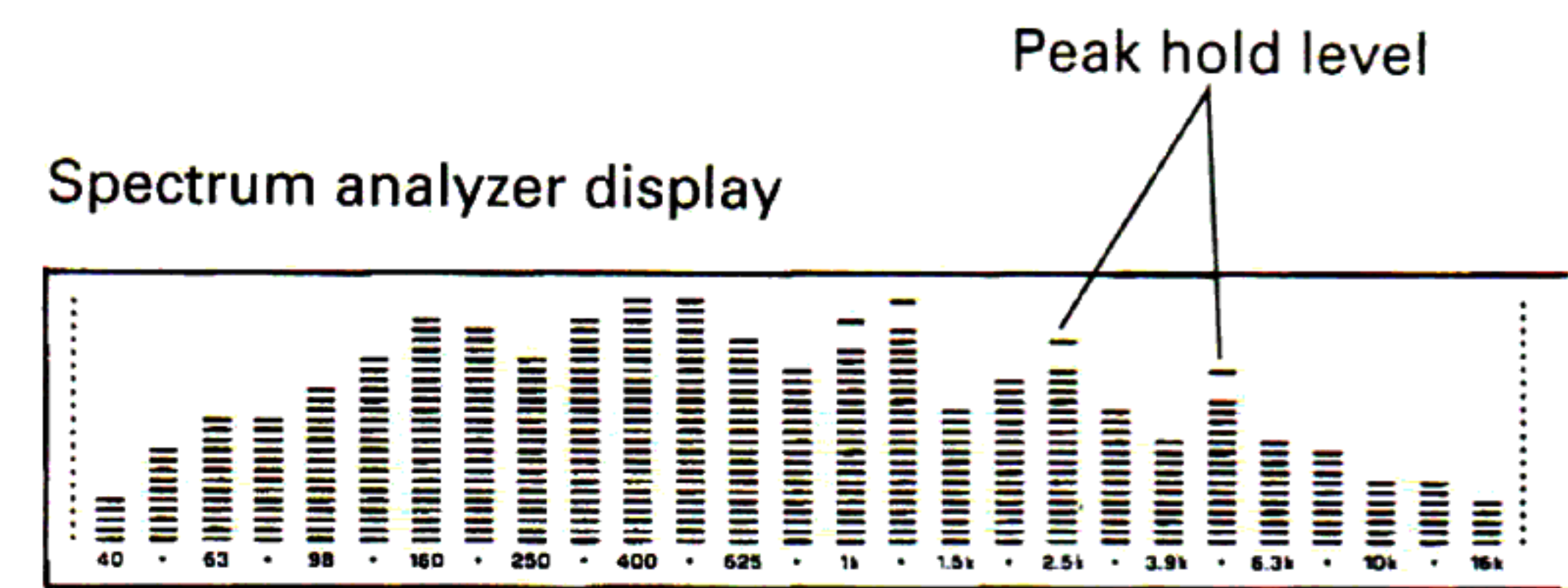
Displays the frequency distribution of the source being played to allow understanding at a glance.

The peak value of the varying level of each frequency range is held and displayed for about 0.5 seconds.

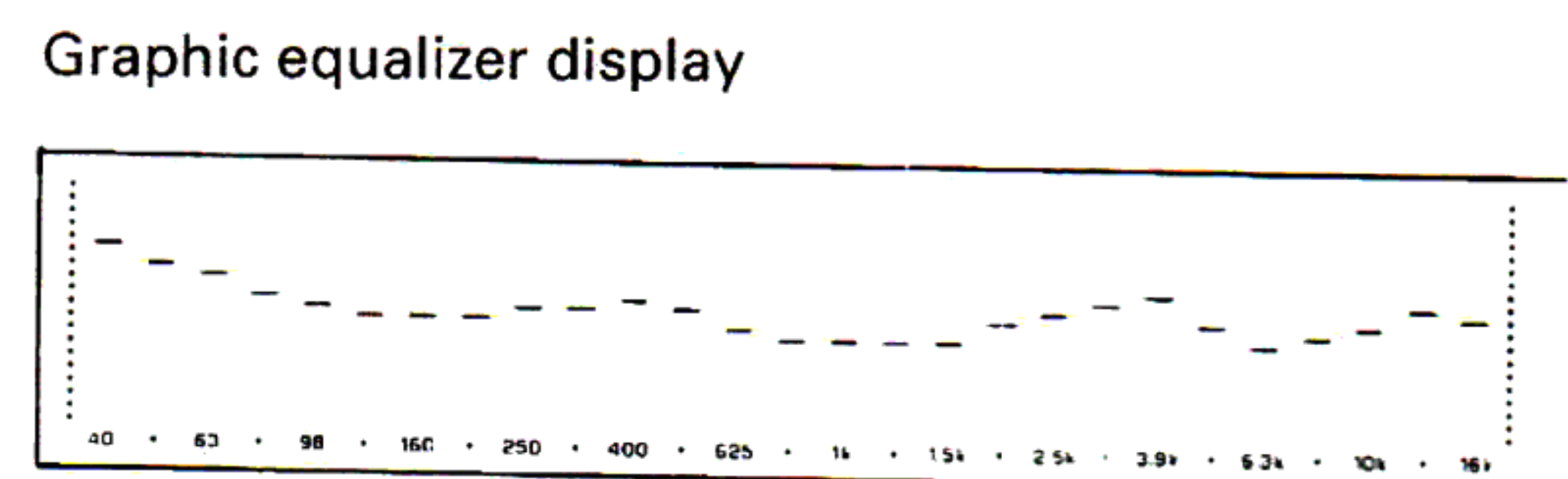
### Graphic equalizer display

Shows how each frequency range is compensated. The graphic equalizer display also appears for about 5 seconds, even while the unit is in the spectrum analyzer display mode, when one of the following operations is performed.

1. Switching power ON.
2. An operation key associated with an equalizer operation is pressed.

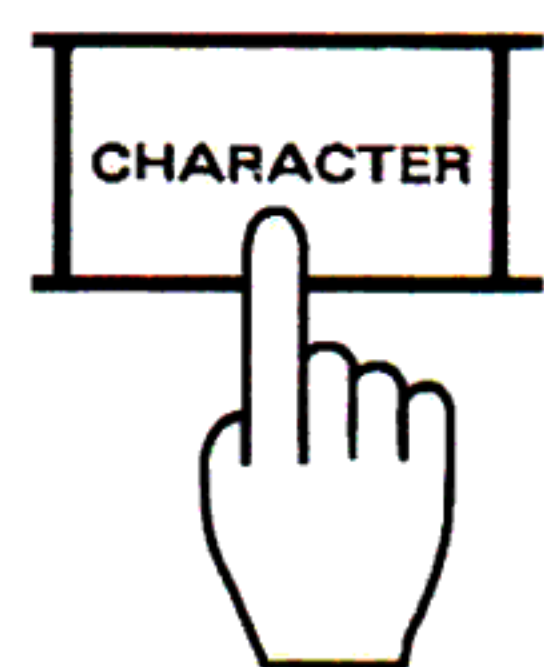


The display mode changes every time the **DISPLAY** key is pressed.

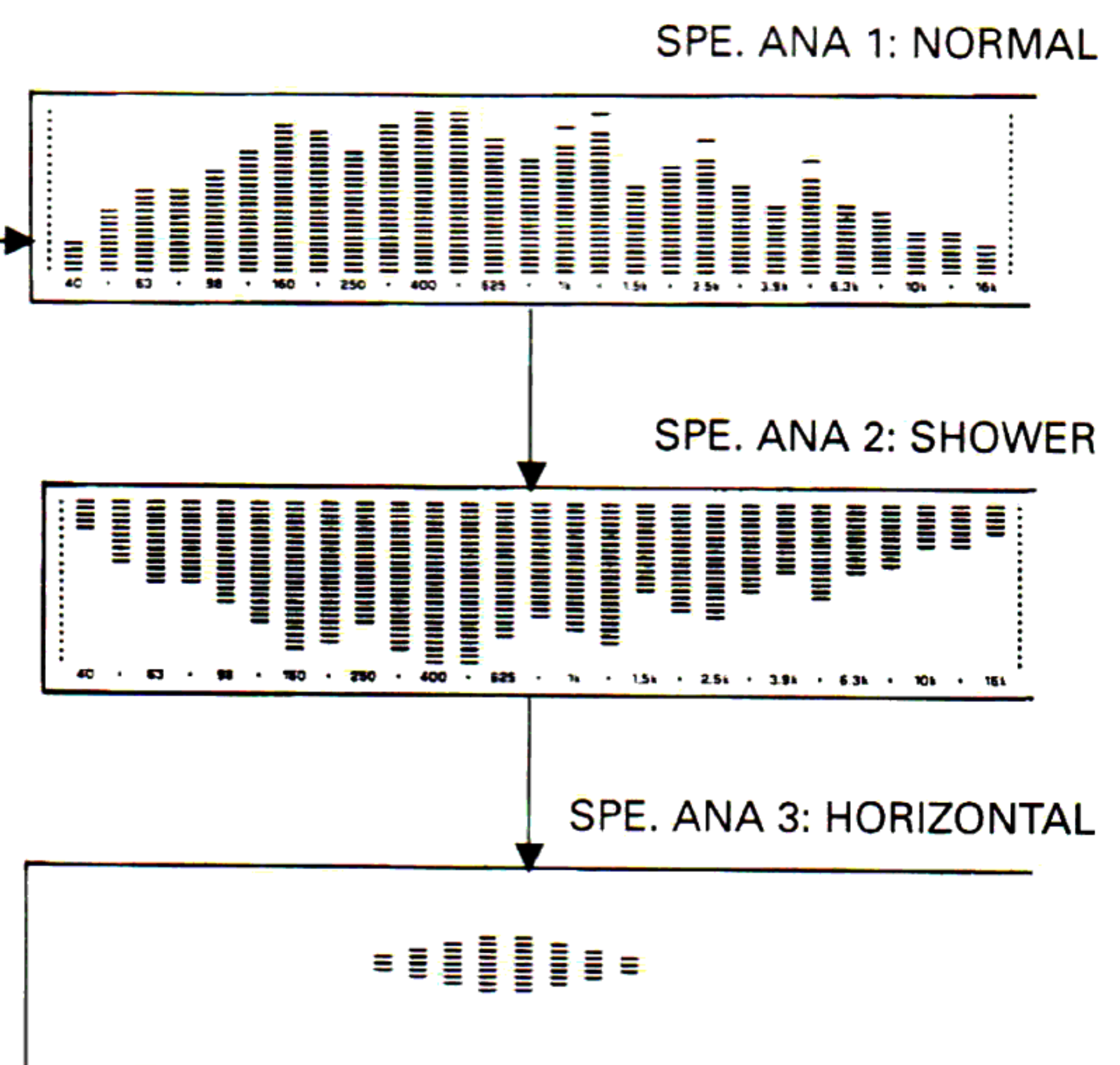
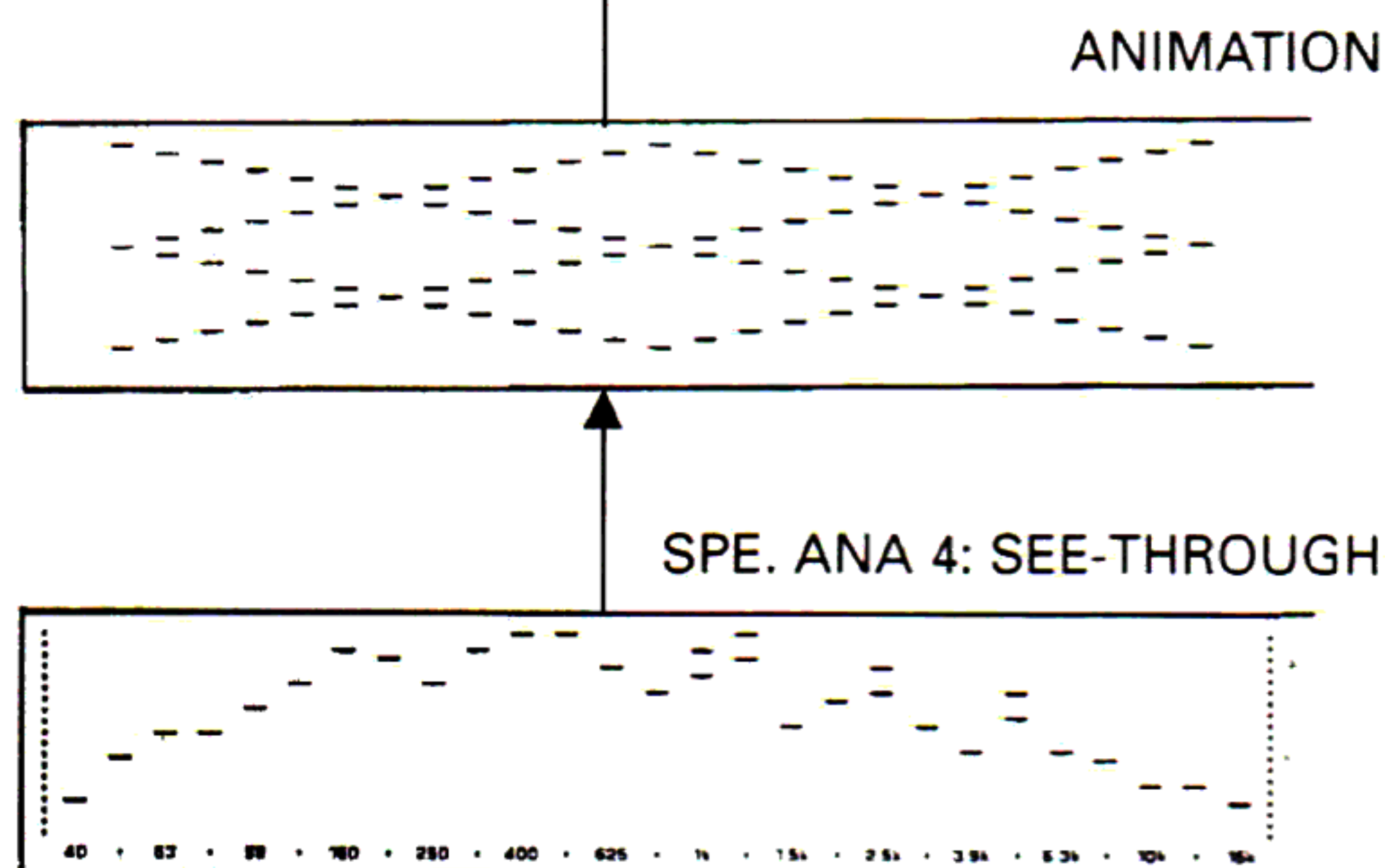


## Character display

Press the **CHARACTER** key during the spectrum analyzer display mode.



The display mode changes every time the **CHARACTER** key is pressed.



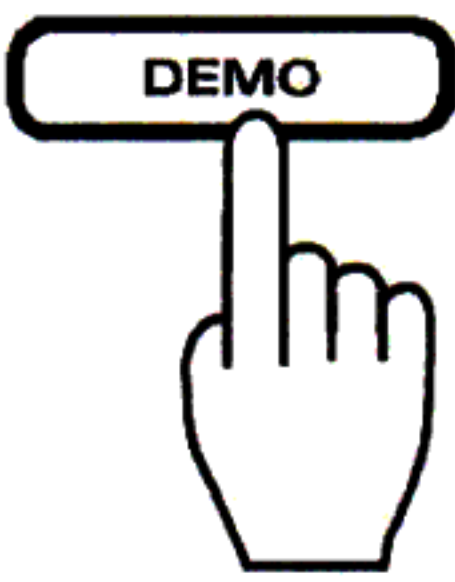


Demonstration procedure

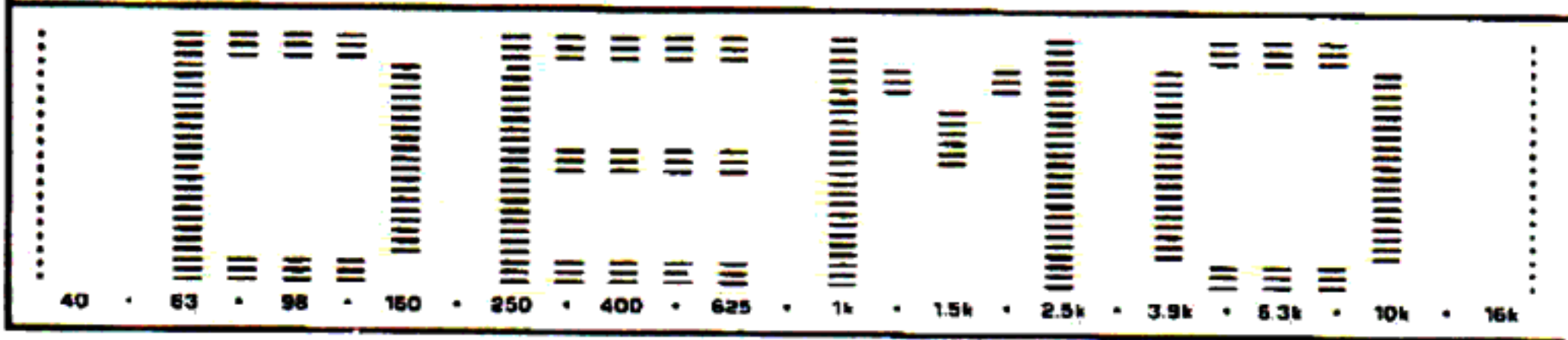
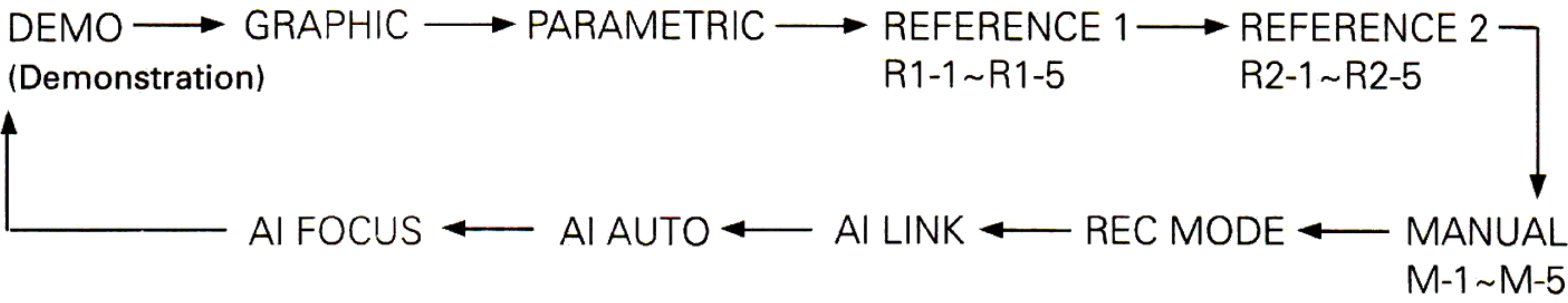
This feature makes it possible to check the equalizer effects both visually and audibly.

- ① Play the source.
- ② Select the DEMO mode.

Demonstration is repeated in the following cycle:



(approx. 4 minutes per cycle).

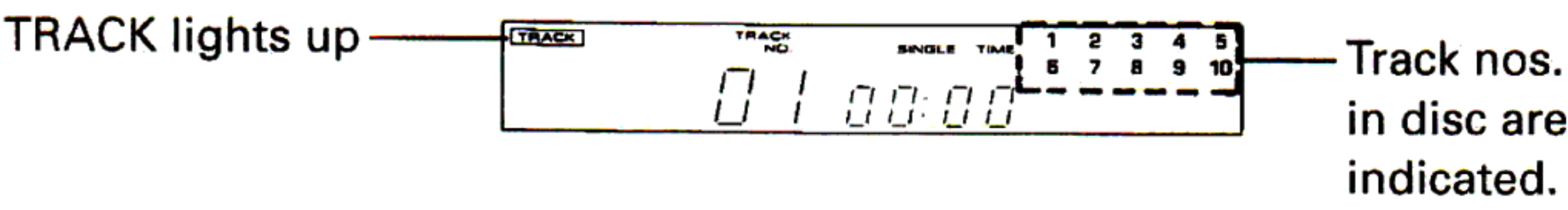


- Press the DEMO key to stop demonstration.
- During AI LINK demonstration, the Presence mode of the amplifier also changes (with the M-85 or M-959 system).
- After the AI LINK demonstration, the presence mode of the amplifier is turned off automatically.

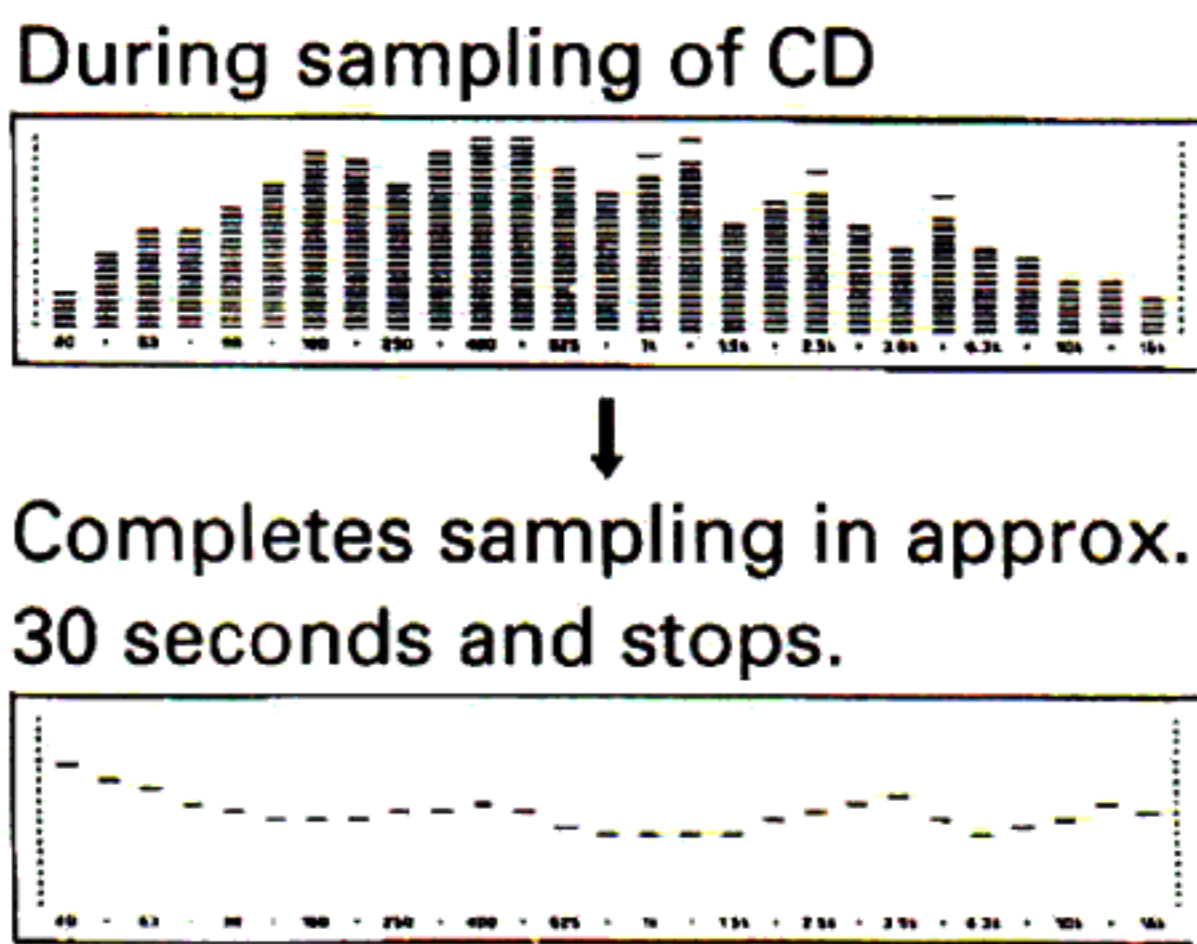
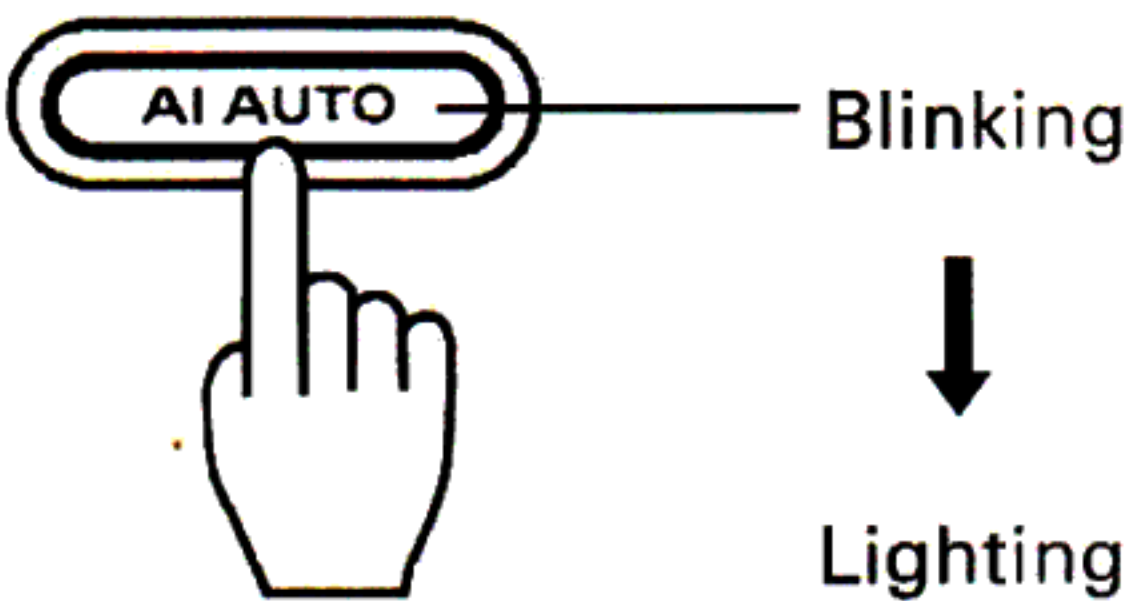
Operation of AI AUTO (for CD play only)

The equalizer curve suitable for a specific disc is set automatically by simply pressing the AI AUTO key. With the M-65 or M-858 system, set the HIT MASTER and MELODY ASSIST keys of the amplifier to OFF previously ( see page 38, 39).

- 1 Place a disc in the CD player.



- 2 Press the AI AUTO key.



Spectrum analyzer display:  
AI AUTO blinks.

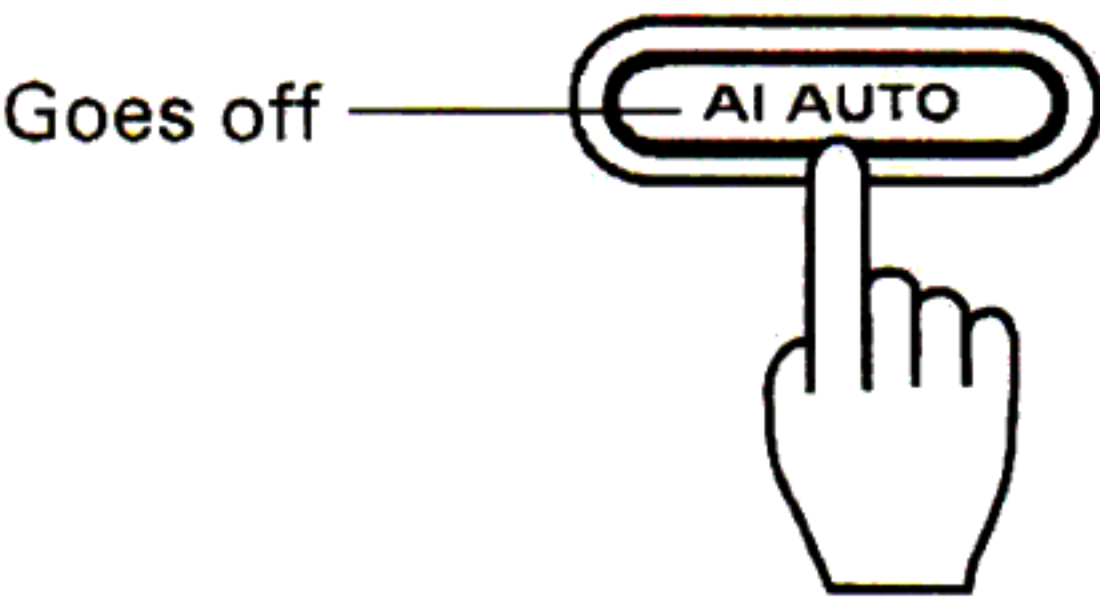
Graphic equalizer display:  
EQ. ON and AI AUTO light up.

- Wait for about 30 seconds until EQ.ON and AI AUTO light up.

Playback starts automatically.

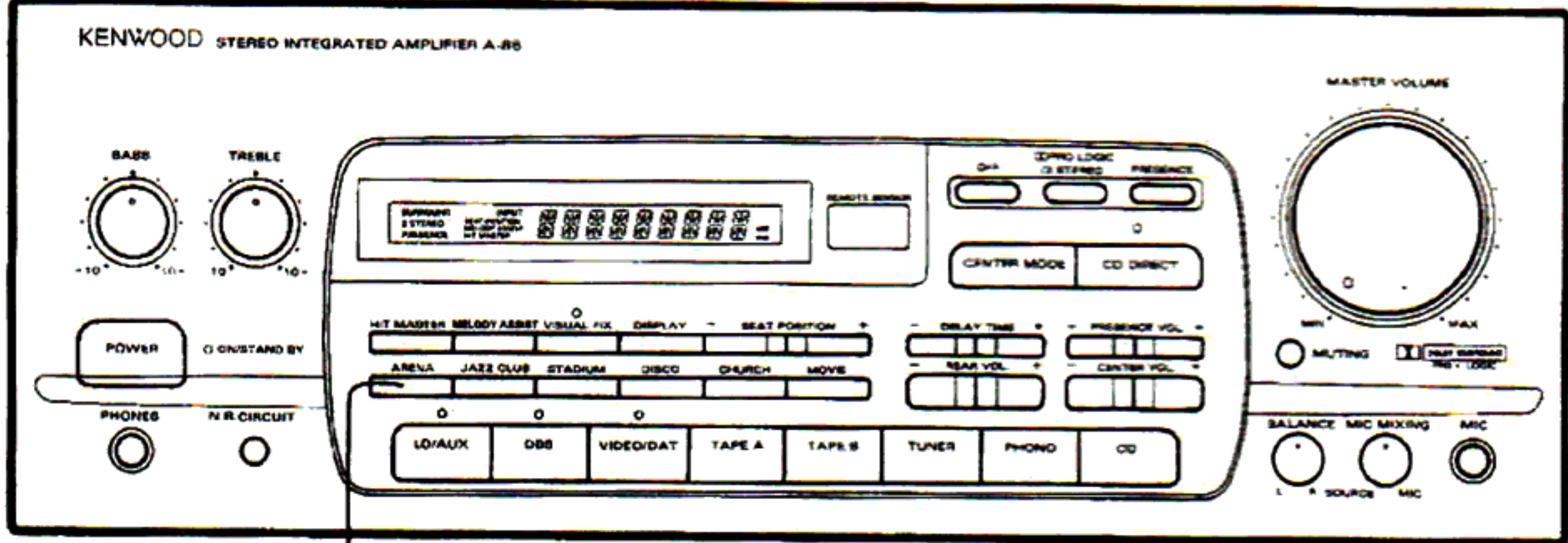
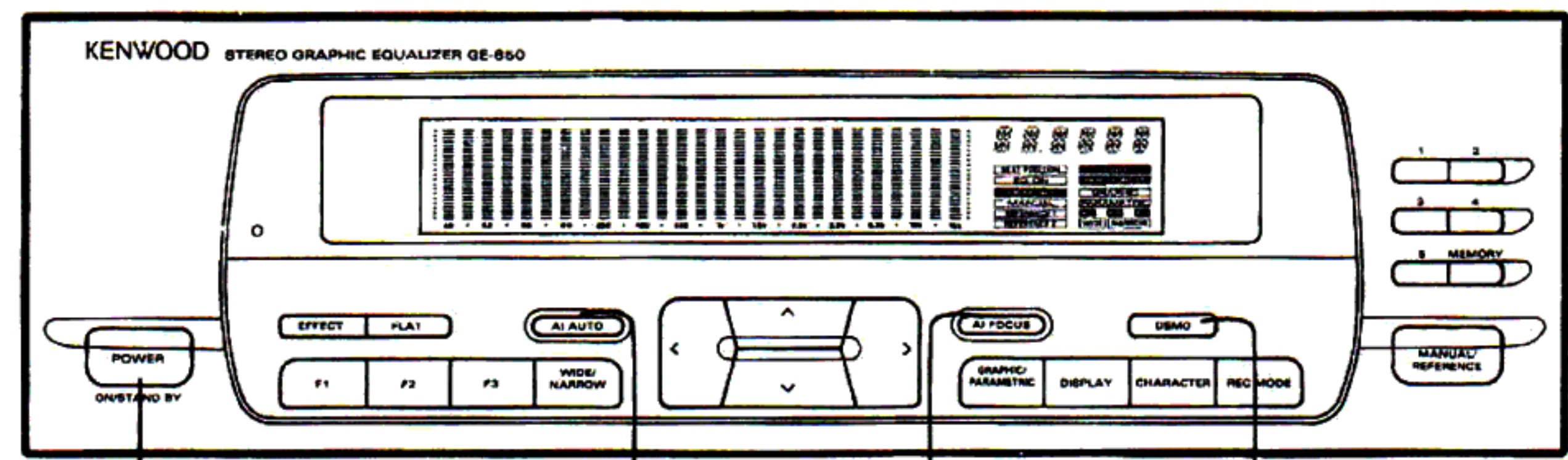
Note:  
In step 2, the other keys than the AI AUTO and the POWER key do not operate.

To cancel AI AUTO



- AI AUTO is canceled also when the disc tray of the CD player is opened.
- If it is canceled during AI AUTO setting operation, the last pattern selected before is displayed.
- If it is canceled after AI AUTO setting operation, the curve becomes flat.





POWER key AI AUTO key AI FOCUS key DEMO key

Presence mode key

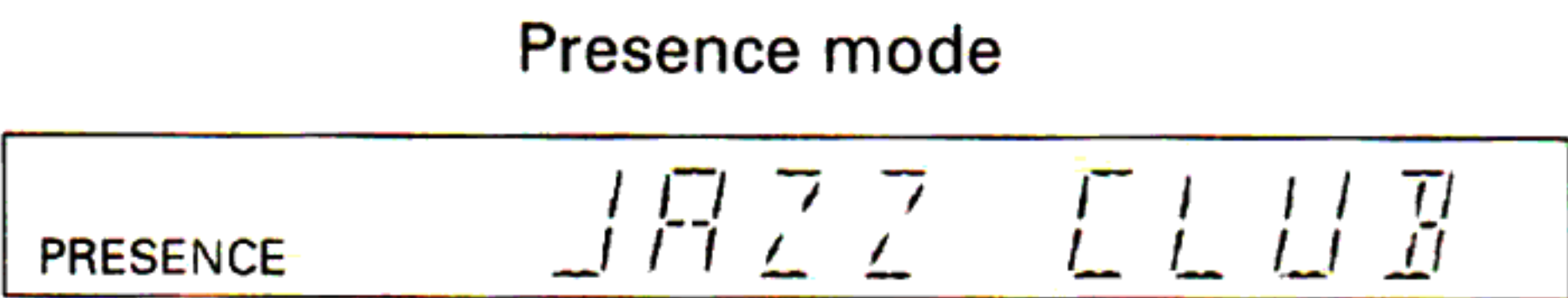
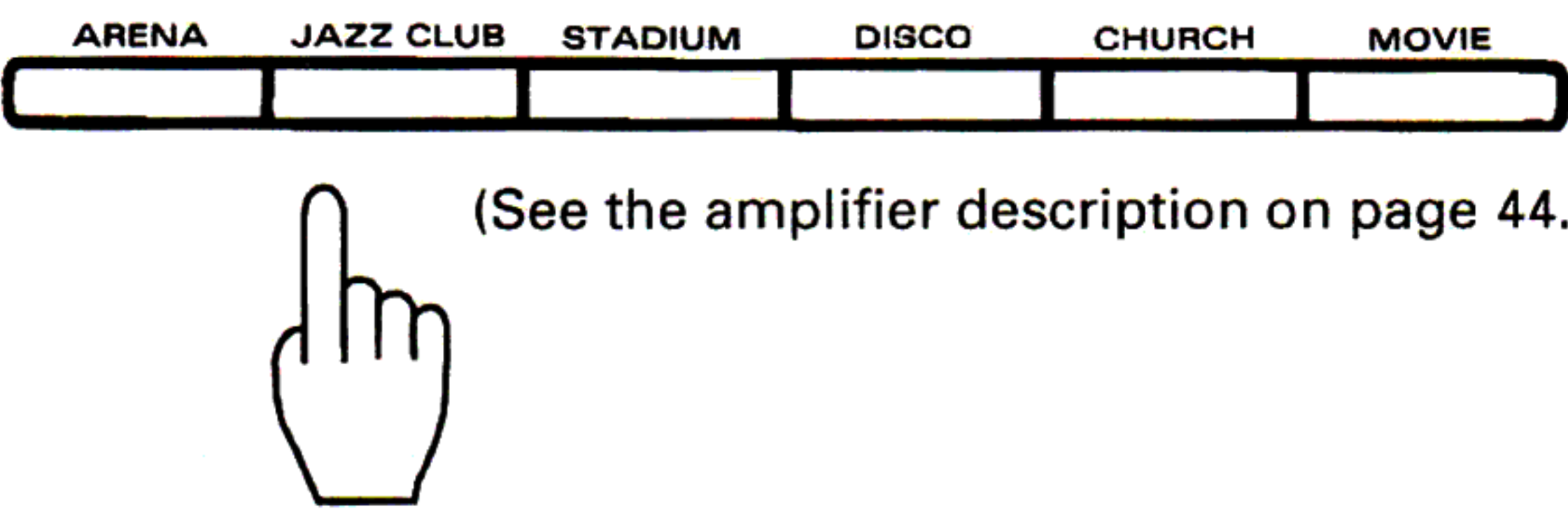
■Operation of AI FOCUS (for CD play only)

The amplifier delay time, presence volume (reverberation level) and equalizer curve are set automatically by simply pressing the **AI FOCUS** key (available with the M-85 or M-959 system only).

1 Place a disc in the CD player.

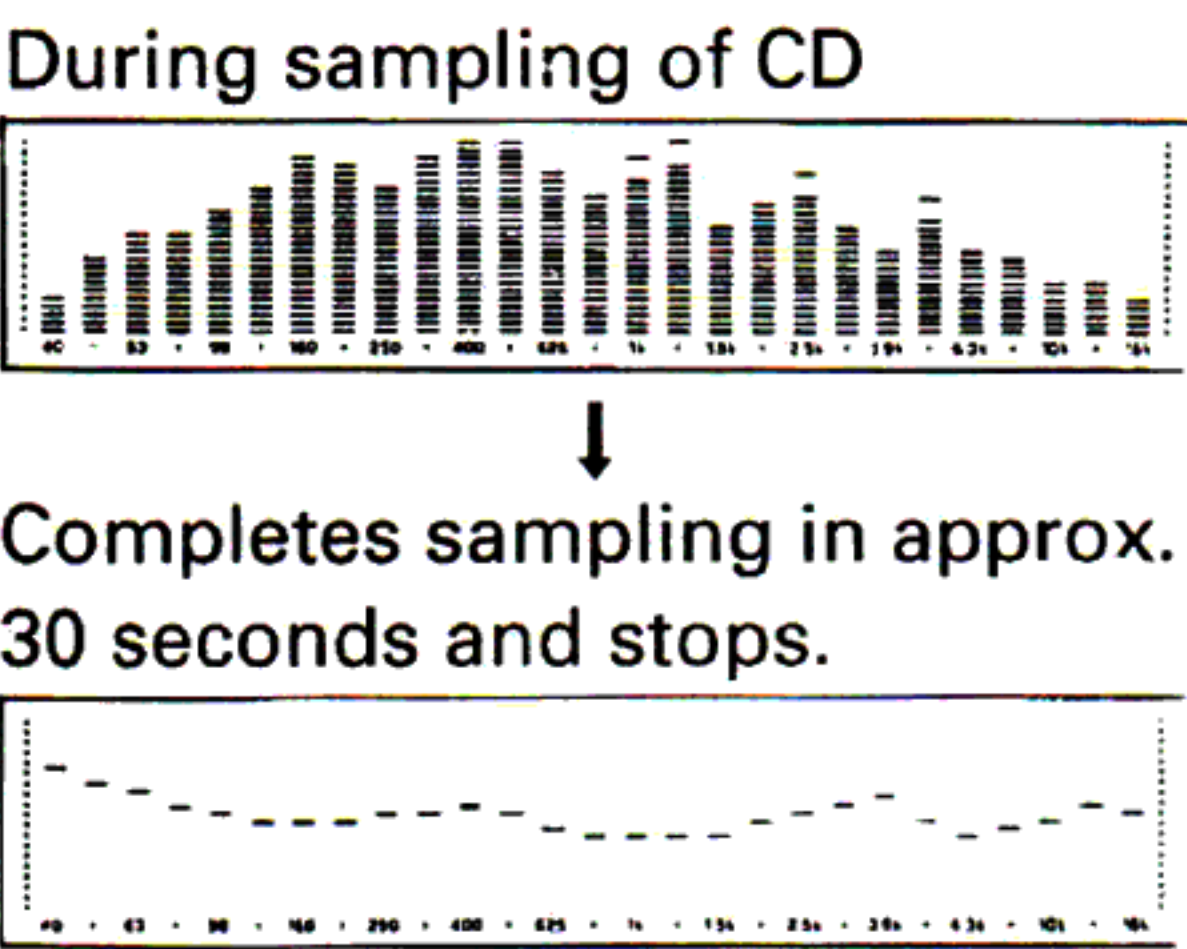
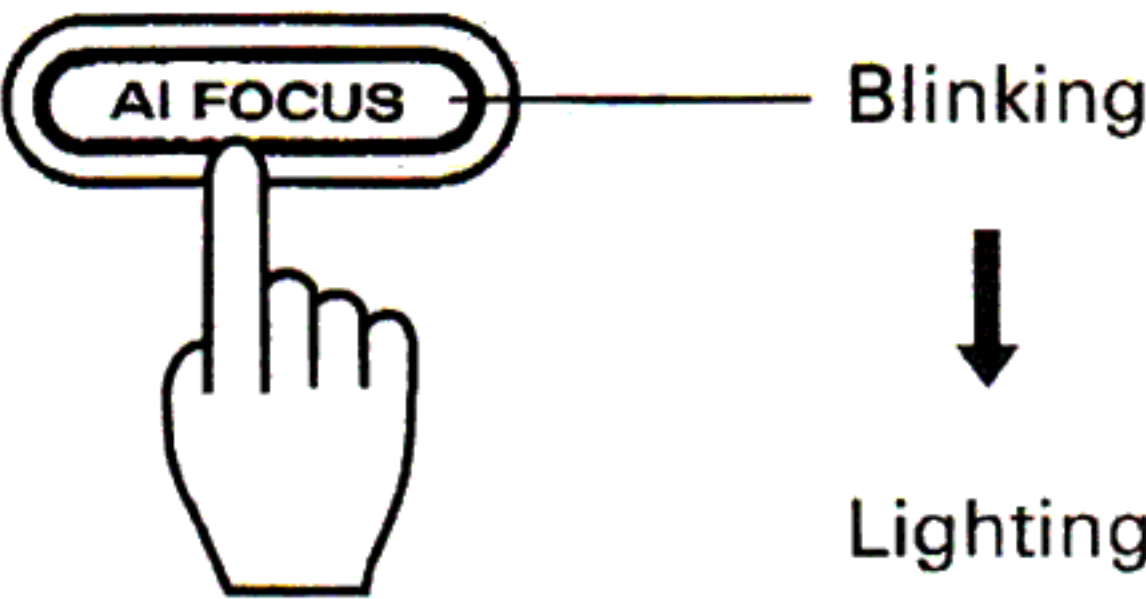


2 Select the presence mode of the amplifier (with the M-85 or M-959 system only).



- With the M-65 or M-858 system, set the **HIT MASTER** and **MELODY ASSIST** keys of the amplifier to OFF (see page 38, 39).

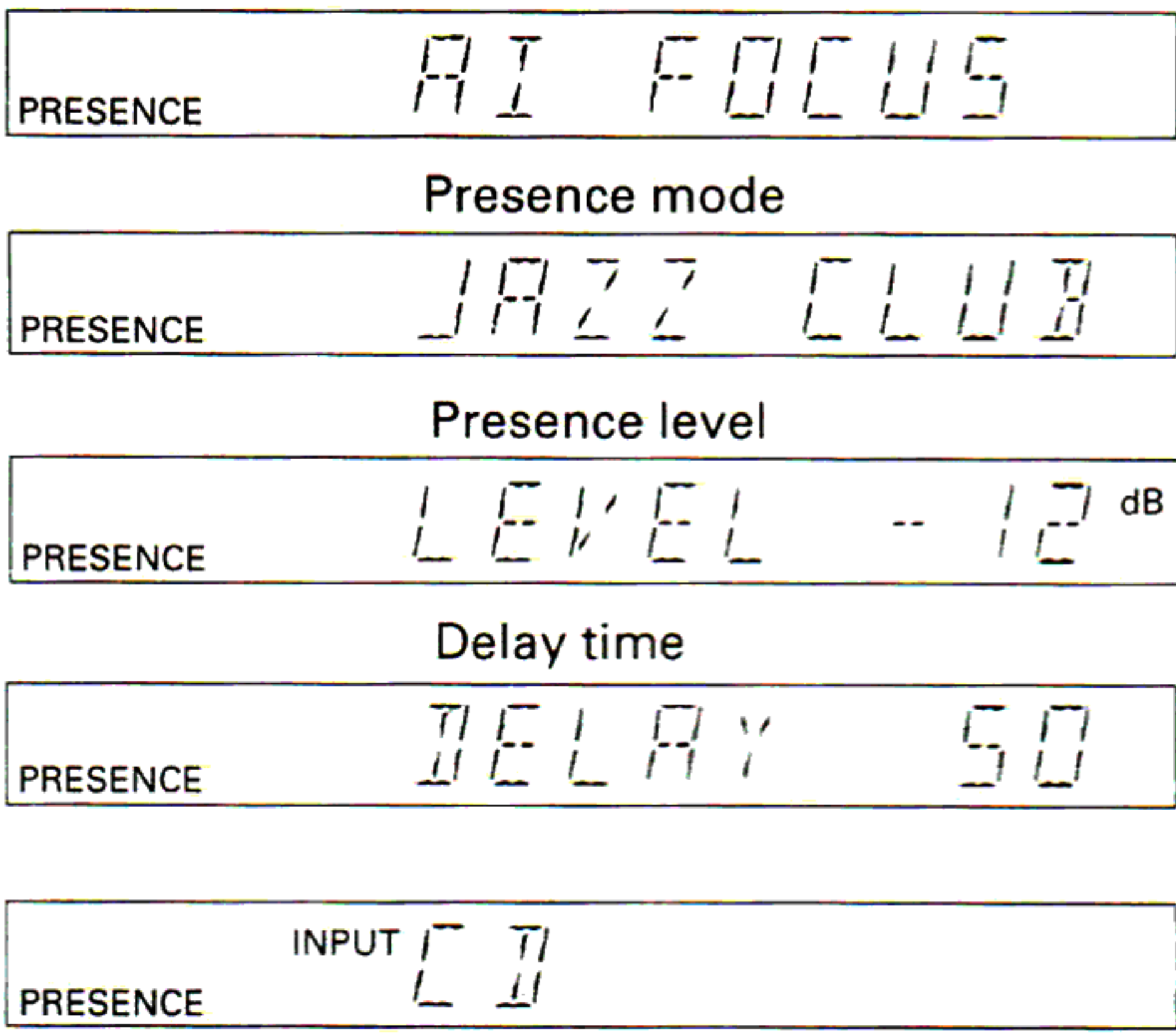
3 Press the AI FOCUS key.



Spectrum analyzer display:  
AI FOCUS blinks.

Graphic equalizer display:  
EQ. ON and AI FOCUS light up.

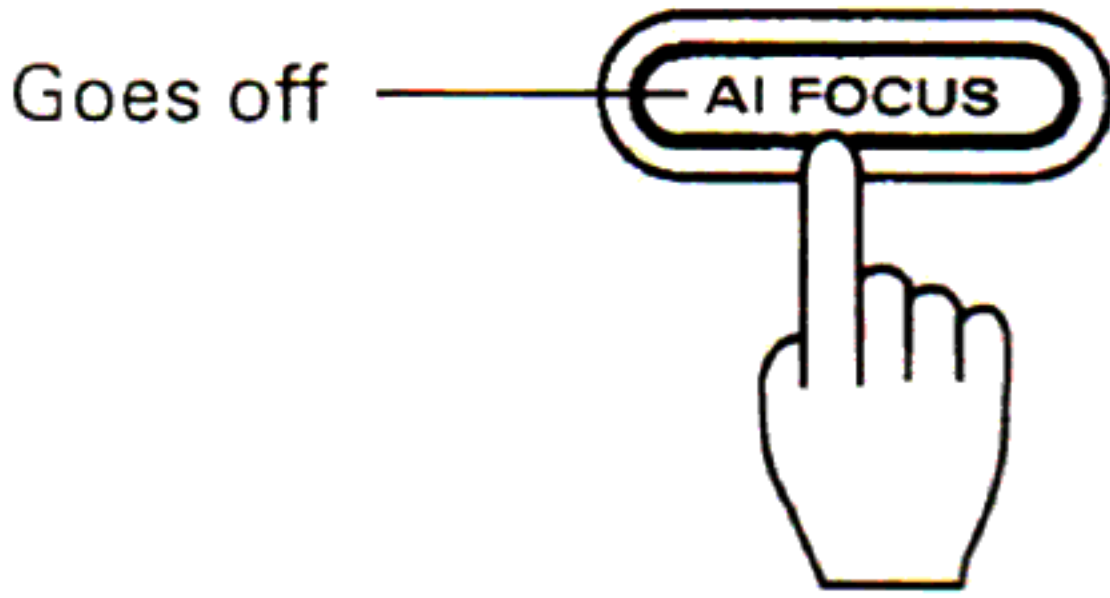
Amplifier display examples (with the M-85 or M-959 system only)



- With the M-85 or M-959 system, the delay time, presence level, etc., are set according to the presence mode selected above.
- With the M-65 or M-858 system, the Surround function is turned ON.
- Wait for about 30 seconds until EQ.ON and AI FOCUS light up.
- Playback starts automatically.

Note:  
In step 3, the other keys than the **AI FOCUS** and the **POWER** key do not operate.

To cancel AI FOCUS

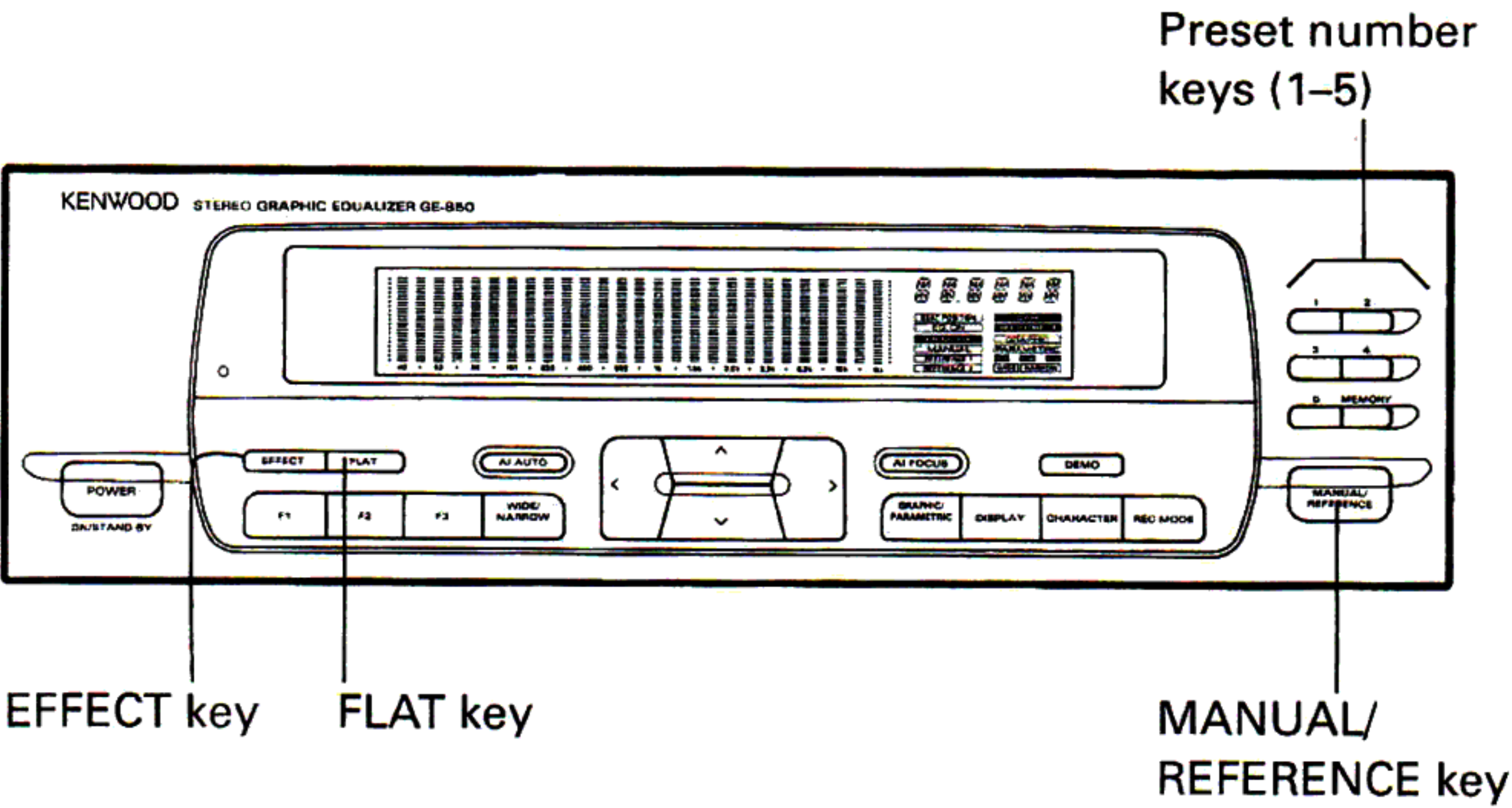


- AI FOCUS is canceled also when the disc tray of the CD player is opened.
- If it is canceled during AI FOCUS setting operation, the last pattern selected before is displayed.
- If it is canceled after AI FOCUS setting operation, the curve becomes flat.



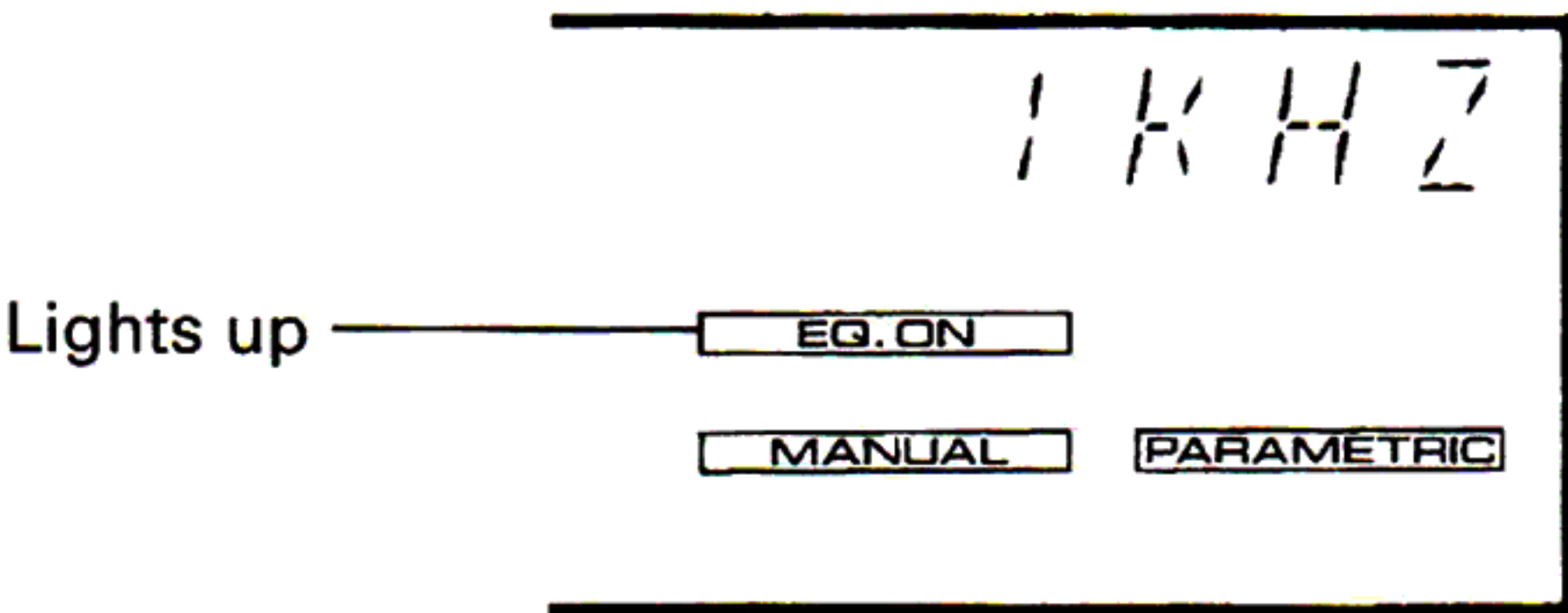
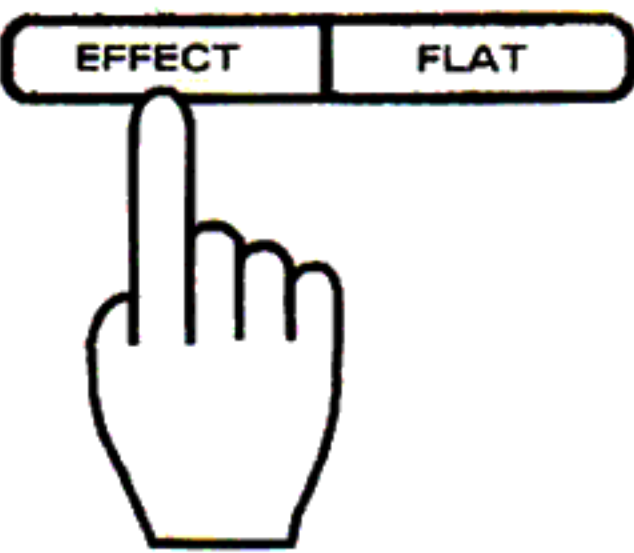
■ Operation of MANUAL/REFERENCE feature

This feature allows to recall one of 15 preset equalizer patterns in a simple manner.  
The equalizer pattern curves of the REFERENCE mode are capable of modifying automatically in case of double-speed recording.  
The equalizer pattern curves of the MANUAL mode (M-1 to M-4) are to be used mainly in the Surround mode (with the M-85 or M-959 system).



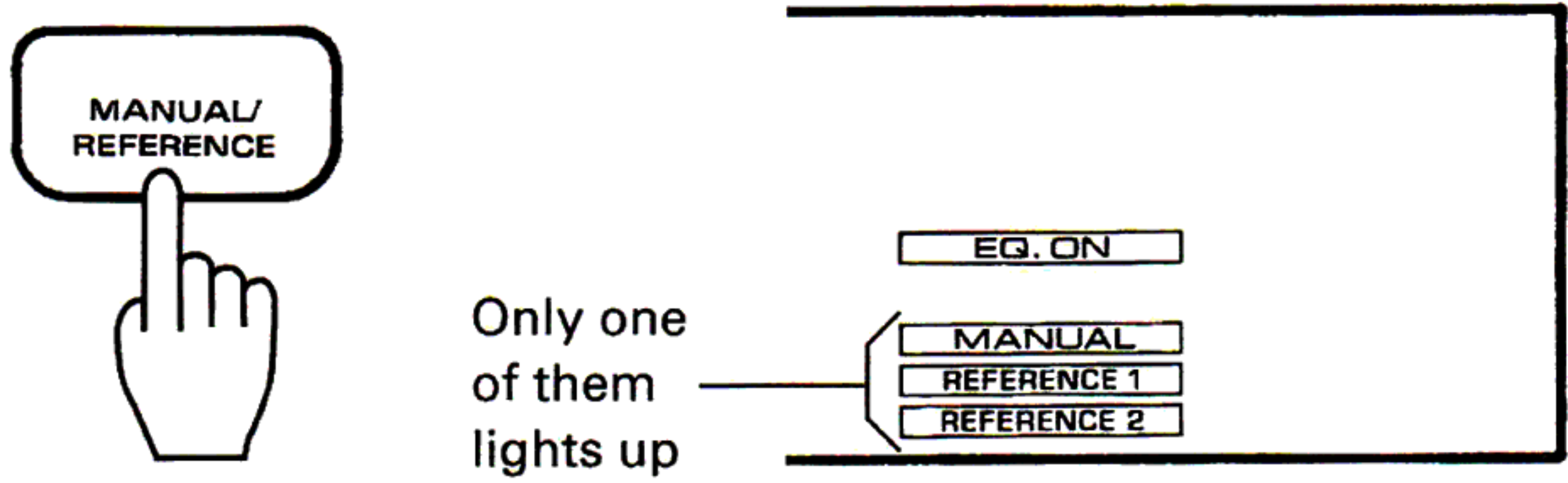
1 Play a music source.

2 Set to the equalizer mode.

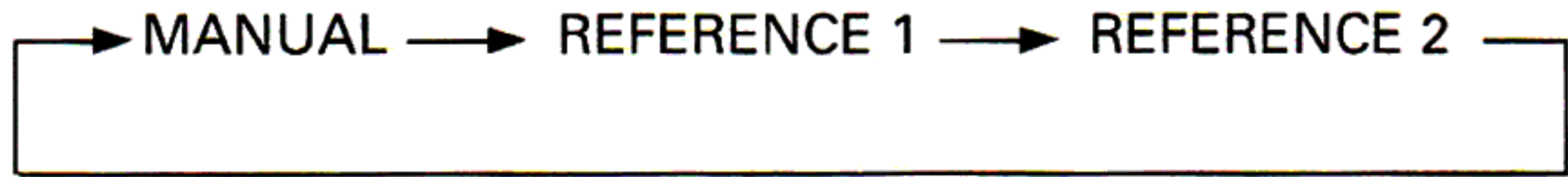


3 Select an equalizer pattern.

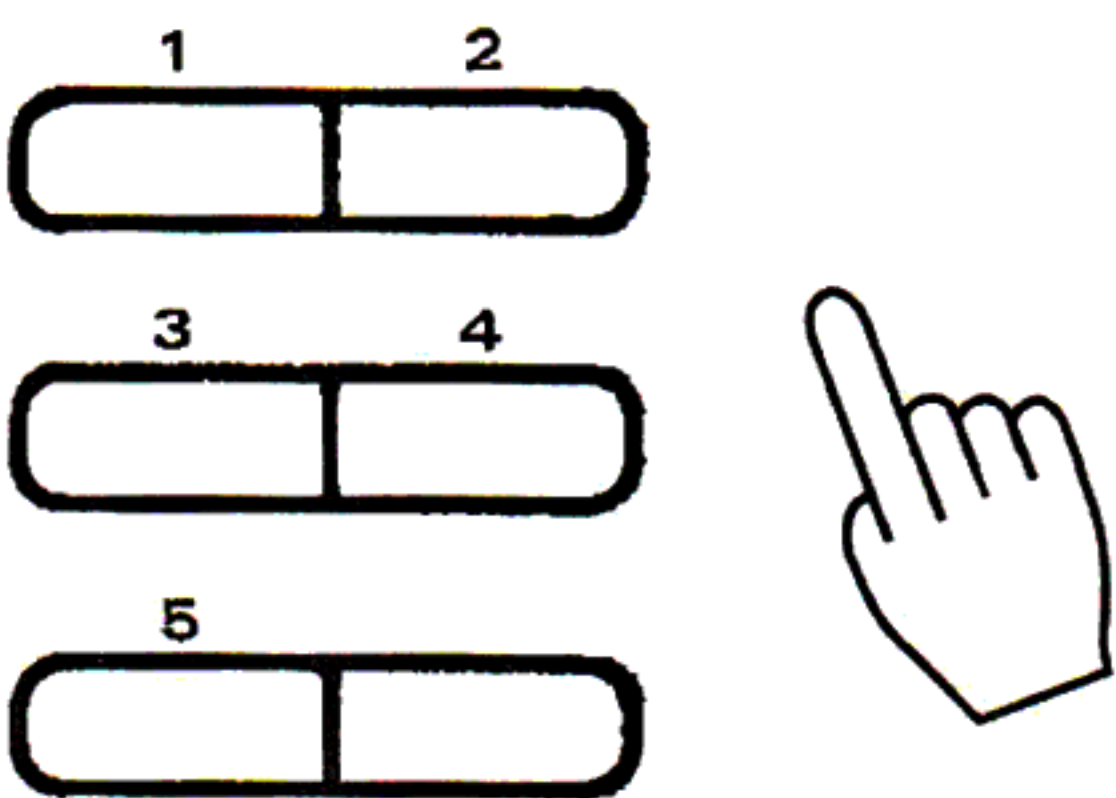
① Select the MANUAL, REFERENCE 1 or 2 mode.



Each press switches the modes.

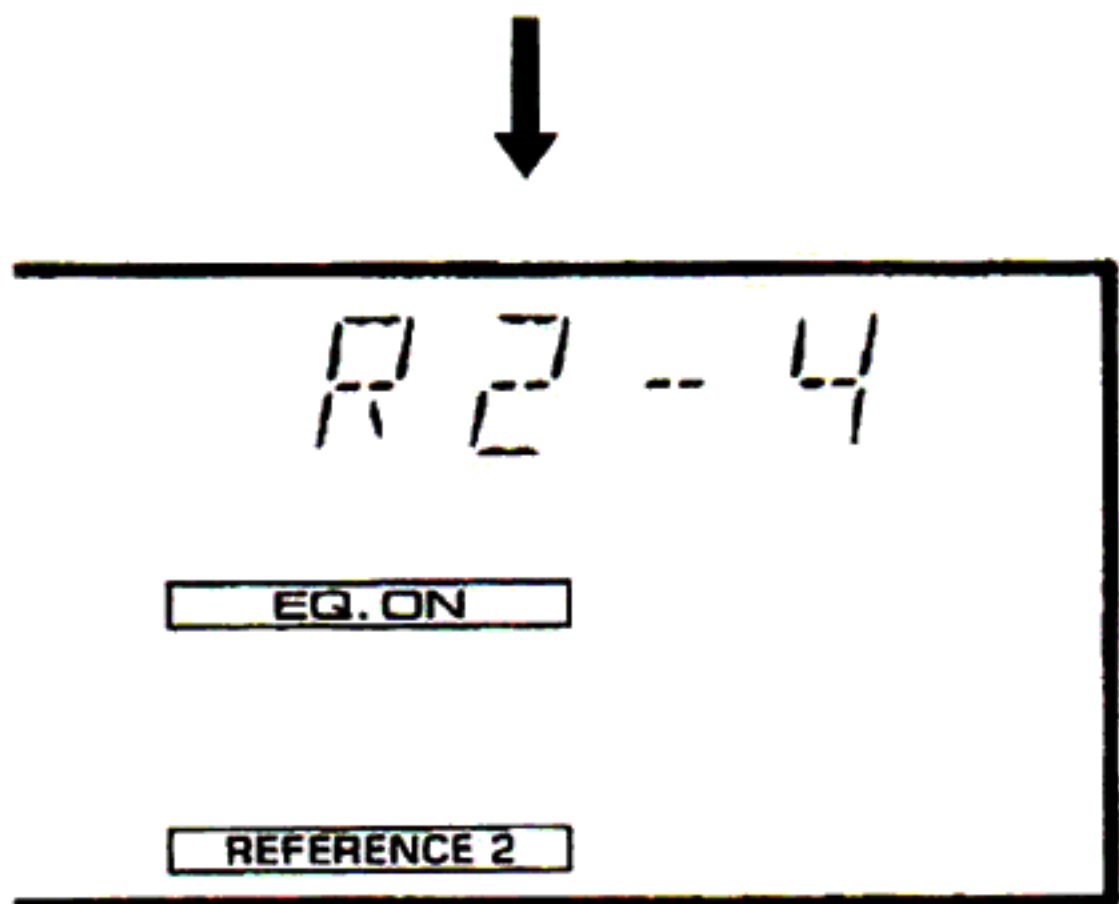


② Press the key for the desired pattern. (Refer to the equalizer pattern list.)

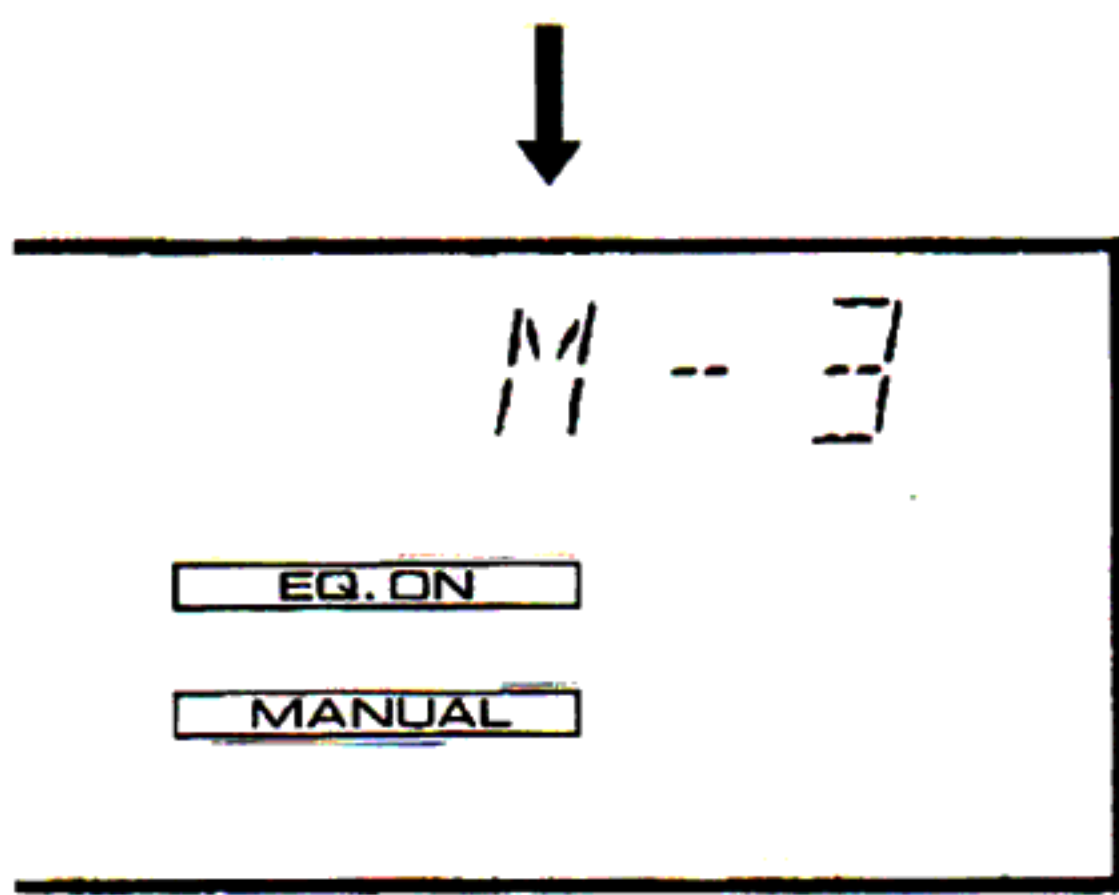


Example: To select R2-4 in the REFERENCE 2 mode, press "4" once.

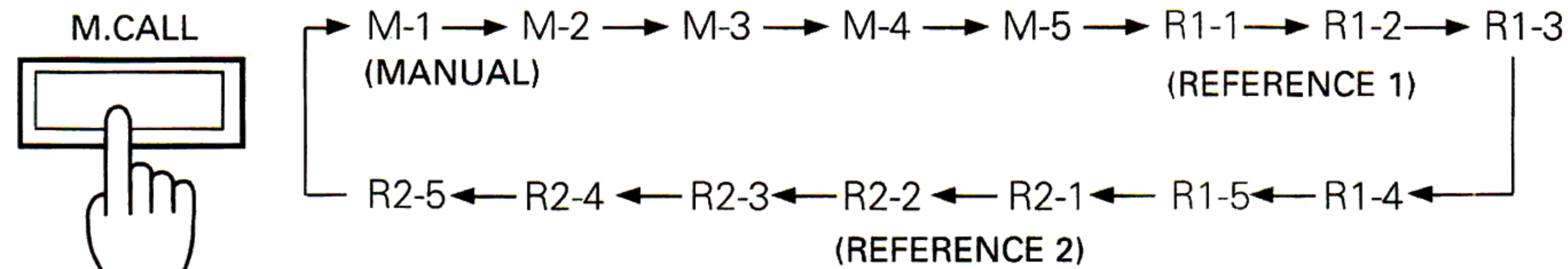
Example: when "4" is selected in the REFERENCE 2 mode.



Example: when "3" is selected in the MANUAL mode.

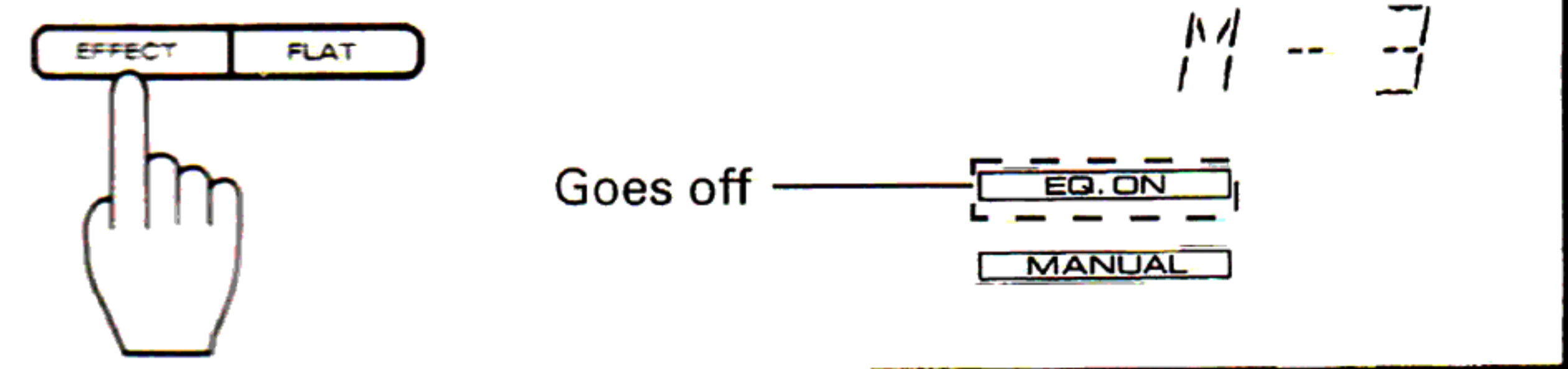


Remote-Controlled selection is also possible.



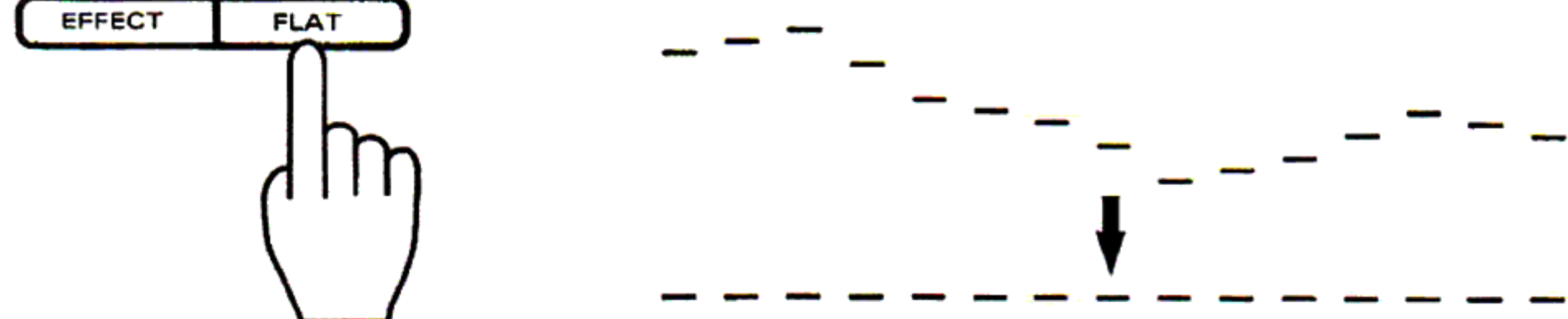
Patterns are switched every time the M.CALL key is pressed.

To cancel the equalizer effect:



- The pattern being displayed remains the same.

How to use the FLAT key.



- Pressing the FLAT key makes the display curve flat.



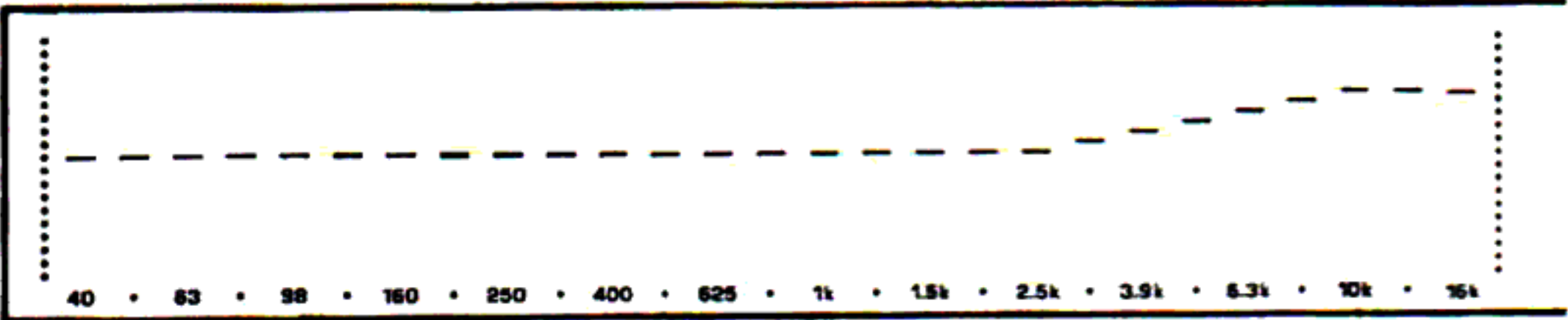
List of equalizer patterns

<div>REFERENCE 1 (R1-1 to R1-5)</div> <div>The patterns of this mode are compatible with double-speed recording.</div>	<div>MANUAL (M-1 to M-5) (Initially-set patterns)</div> <div>It is possible to store in preset memory in this mode.</div>
<div>R1-1:</div> <div>For listening to background music, etc., with comfortable sound to ears.</div>	<div>M-1:</div> <div>When the amplifier presence mode is ARENA, for listening to popular and rock music with enhanced bass and vocal sound.</div>
<div>R1-2:</div> <div>For listening with brilliant sound with attenuated bass.</div>	<div>M-2:</div> <div>When the amplifier presence mode is STADIUM, for listening to popular and rock music with enhanced bass, vocal and treble.</div>
<div>R1-3:</div> <div>For listening to rock, fusion music, etc., with more powerful sound.</div>	<div>M-3:</div> <div>When the amplifier presence mode is ARENA or STADIUM, for listening to orchestral music with enhanced bass and treble.</div>
<div>R1-4:</div> <div>For listening with more exciting sound.</div>	<div>M-4:</div> <div>When the amplifier presence mode is MOVIE, for reducing noise of old movies, etc.</div>
<div>R1-5:</div> <div>(Noise reduction for use in double-speed recording.) For listening to soft sound by attenuating stimulating medium and higher frequencies.</div>	<div>M-5:</div> <div>For listening with clear vocal.</div>
<div>REFERENCE 2 (R2-1 to R2-5)</div> <div>The patterns of this mode are compatible with double-speed recording.</div>	<div>(M-85 or M-959 system):</div> <div>When a presence mode of the amplifier is selected, an optimum equalizer curve is selected according to the mode selected. M-1 to M-4 are for use in enhancing the selected presence effect.</div> <div>(M-65 or M-858 system):</div> <div>When selecting M-4, switch the Surround effect of the amplifier to ON. (see page 40).</div>
<div>R2-1:</div> <div>For listening to orchestral sound with soft tone to the ear.</div>	
<div>R2-2:</div> <div>For listening to orchestral sound with clear vocal and medium/high frequencies.</div>	
<div>R2-3:</div> <div>For listening to orchestral sound with feeling of expansion.</div>	
<div>R2-4:</div> <div>For listening to classical music, etc., of an old disk by attenuating offensive noise to the ear.</div>	
<div>R2-5:</div> <div>For listening to popular or rock type music, of an old disk by attenuating offensive noise to the ear.</div>	

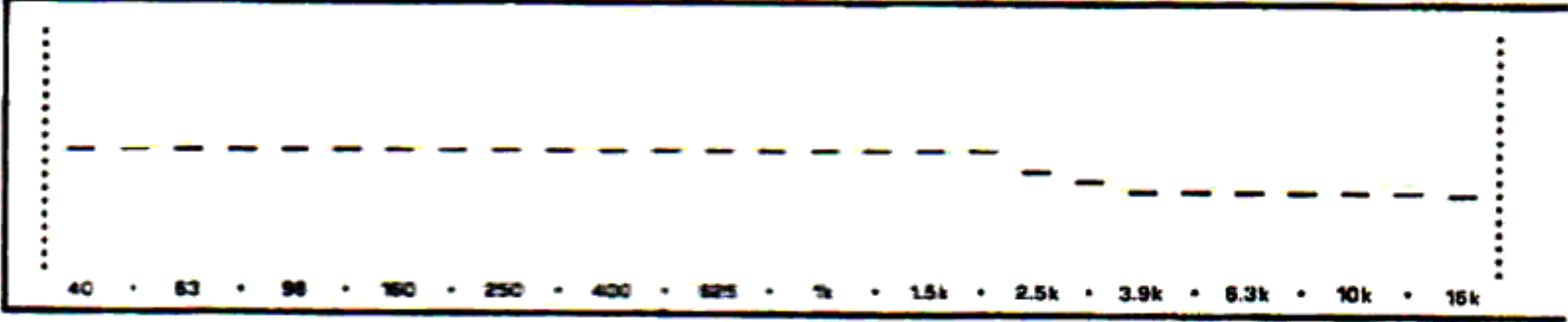
R1-5: (Noise reduction for use in double-speed recording):

The curve in double-speed recording is reversed to the curve in playback. Use this pattern in double-speed recording and playback to obtain the noise reduction effect.

Double-speed recording curve



Playback curve





# Creation of desired equalizer patterns

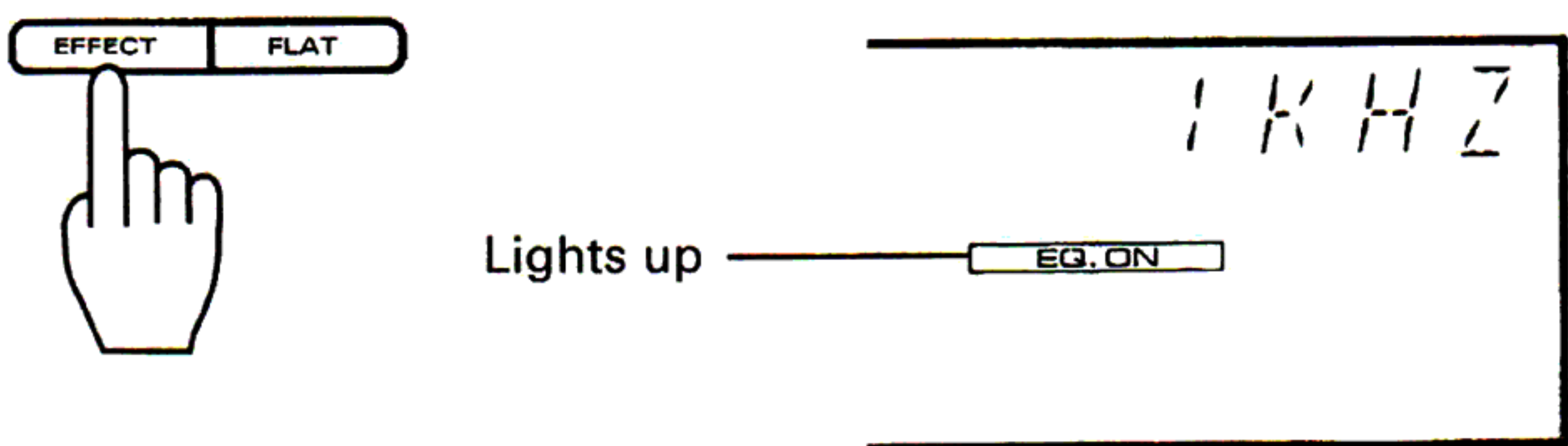
- PARAMETRIC:

This mode allows to create a curve for up to three ranges centered around the user-selected frequencies in the low-, medium- and high-frequency ranges. The inclination of each curve can be selected between WIDE (gentle slope) and NARROW (steep slope).
- GRAPHIC:

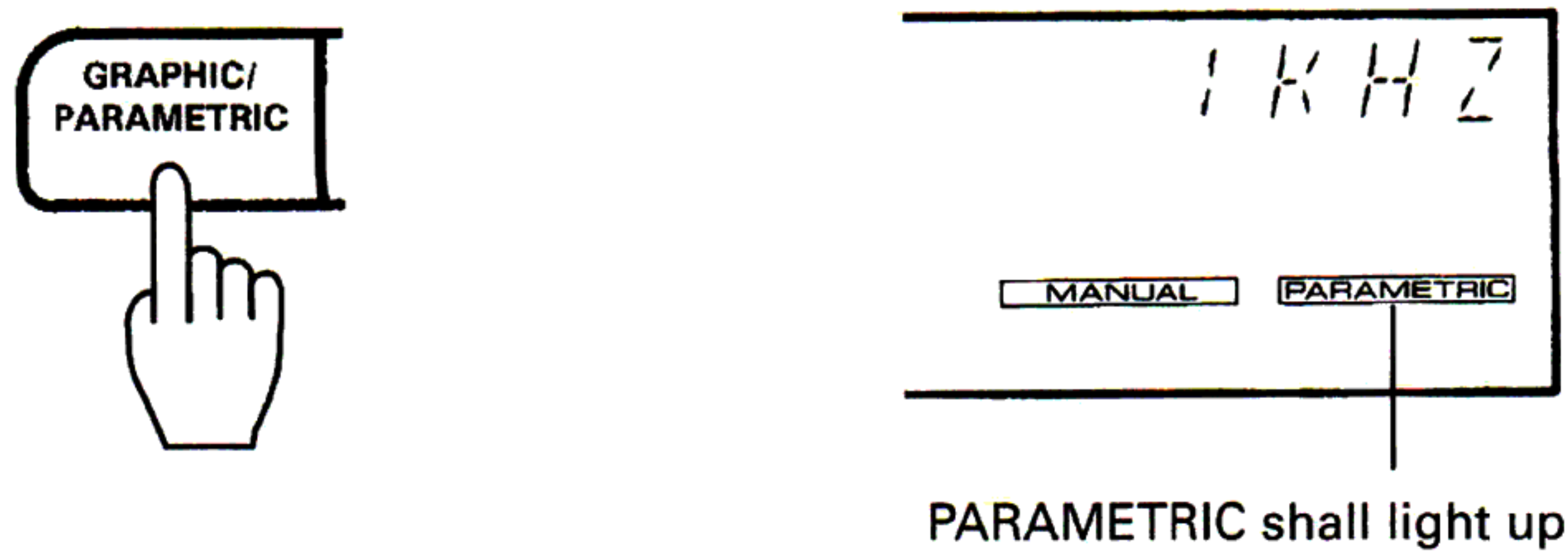
This mode allows to adjust the equalizer curve for each frequency band provided. The curve created in the Parametric mode can be fine-adjusted in this mode.

## ■ Adjusting curves centered around user-selected frequency ranges (Parametric mode)

### 1 Set to the equalizer mode.

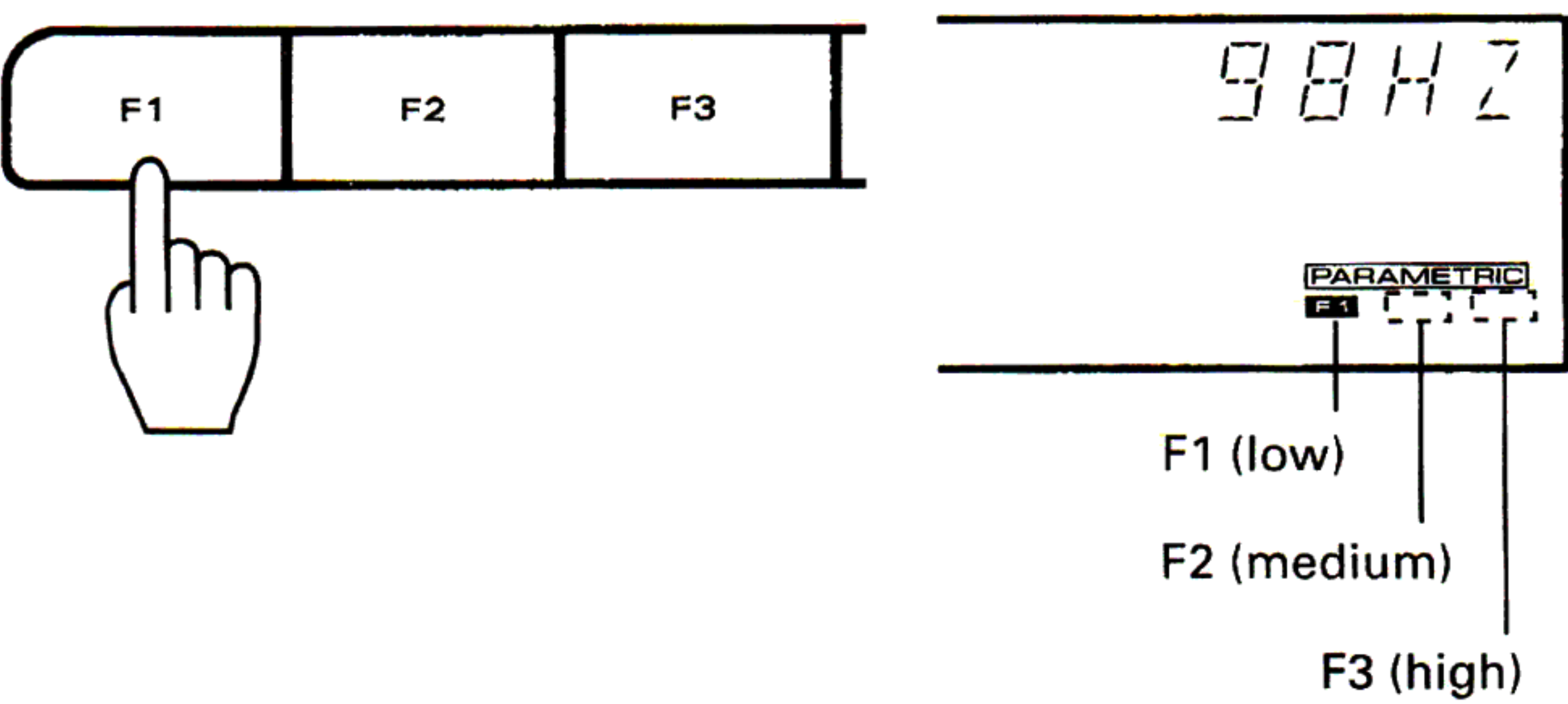


### 2 Select the Parametric mode.



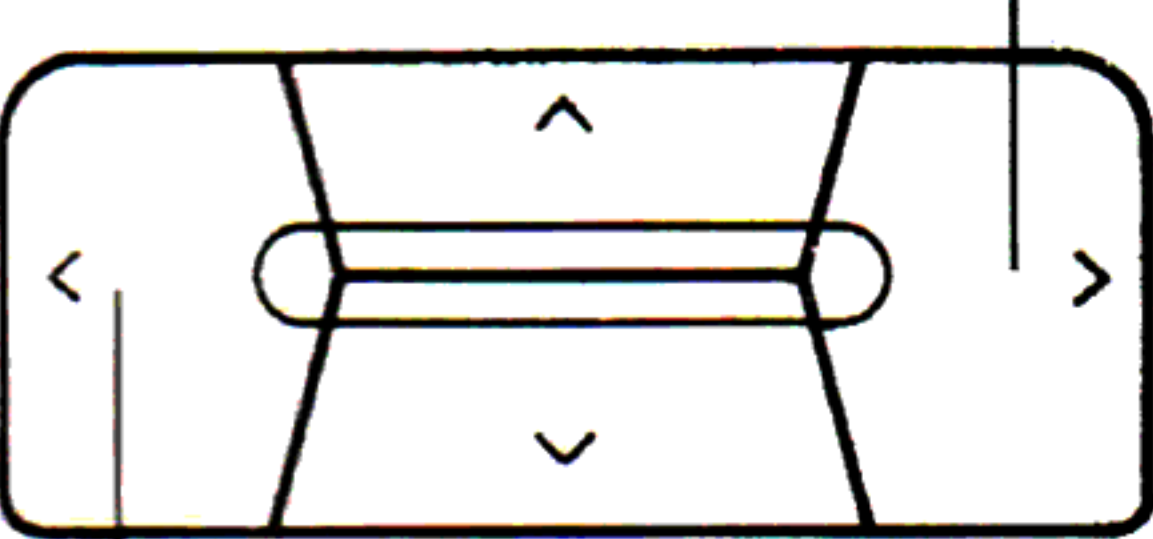
### 3 Select the center frequency of the range to be adjusted.

#### ① Select the frequency range.



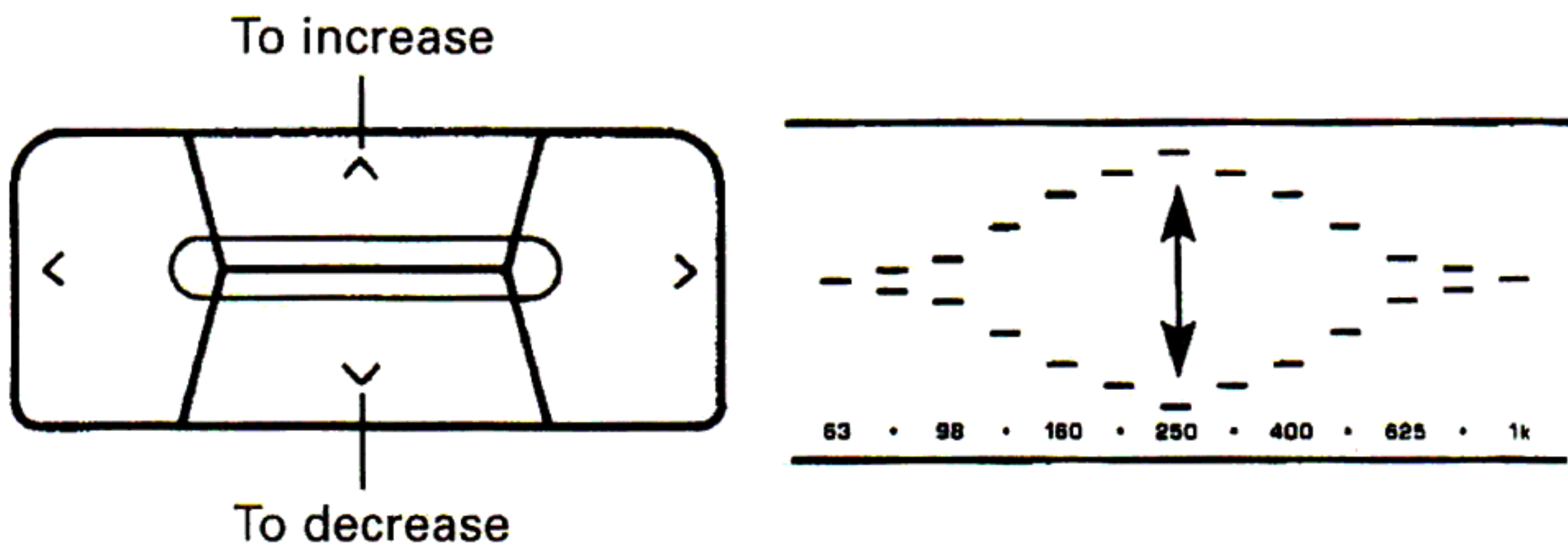
#### ② Select the center frequency.

For increasing the frequency



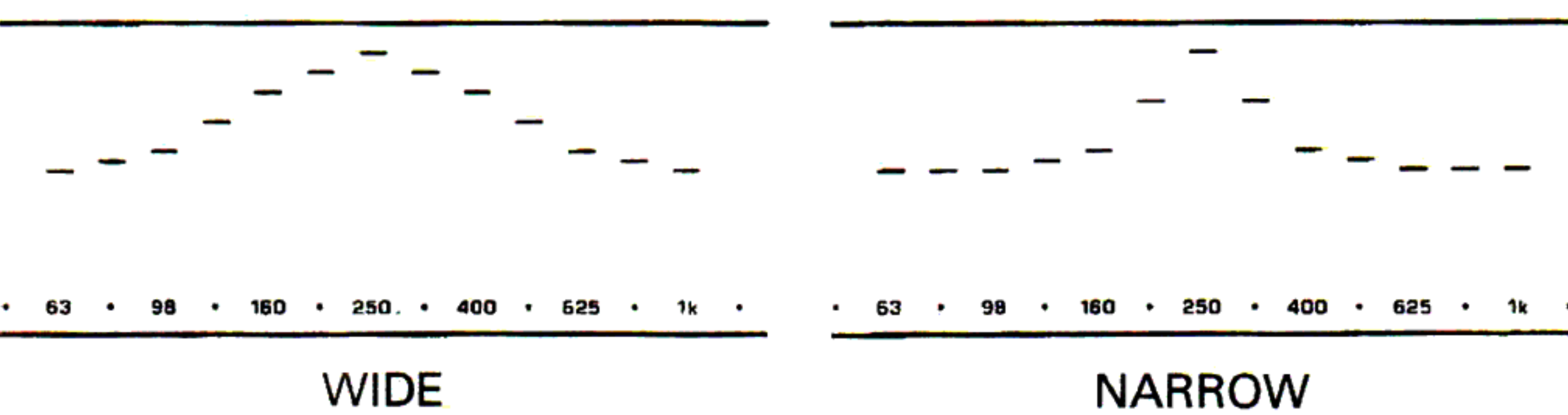
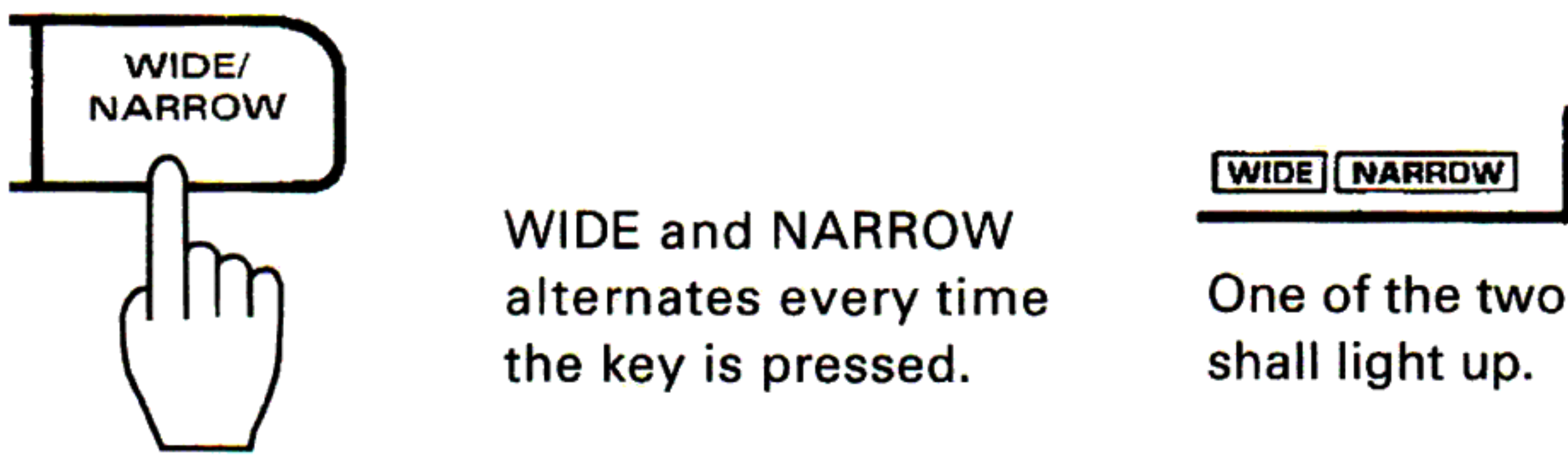
For decreasing the frequency

### 4 Adjust the level.



- Pressing the **FLAT** key allows to start adjustment from the flat level position.

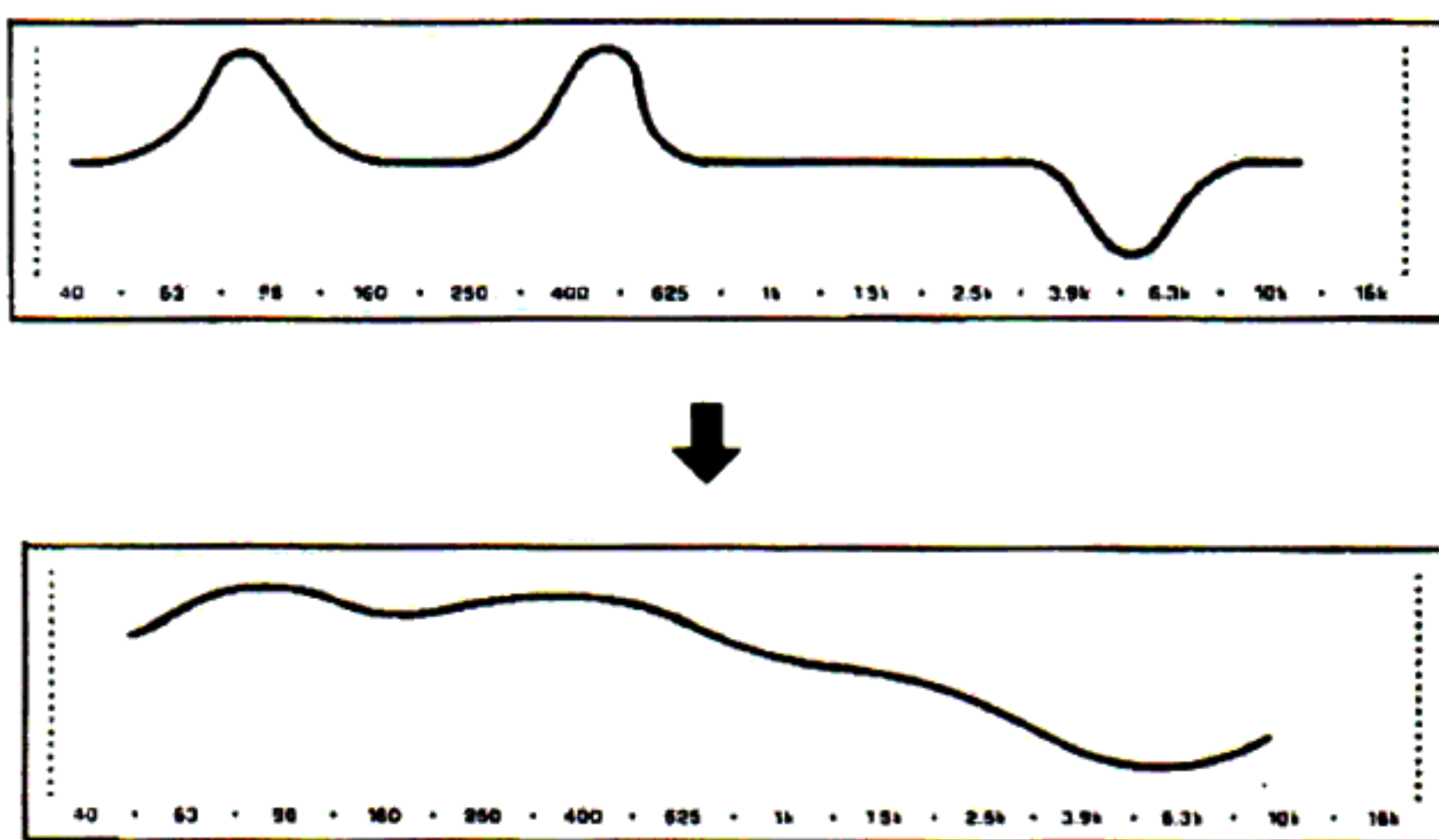
### 5 Select the inclination of the curve.



- Once adjusted, the curve remains the same until the next time it is adjusted.

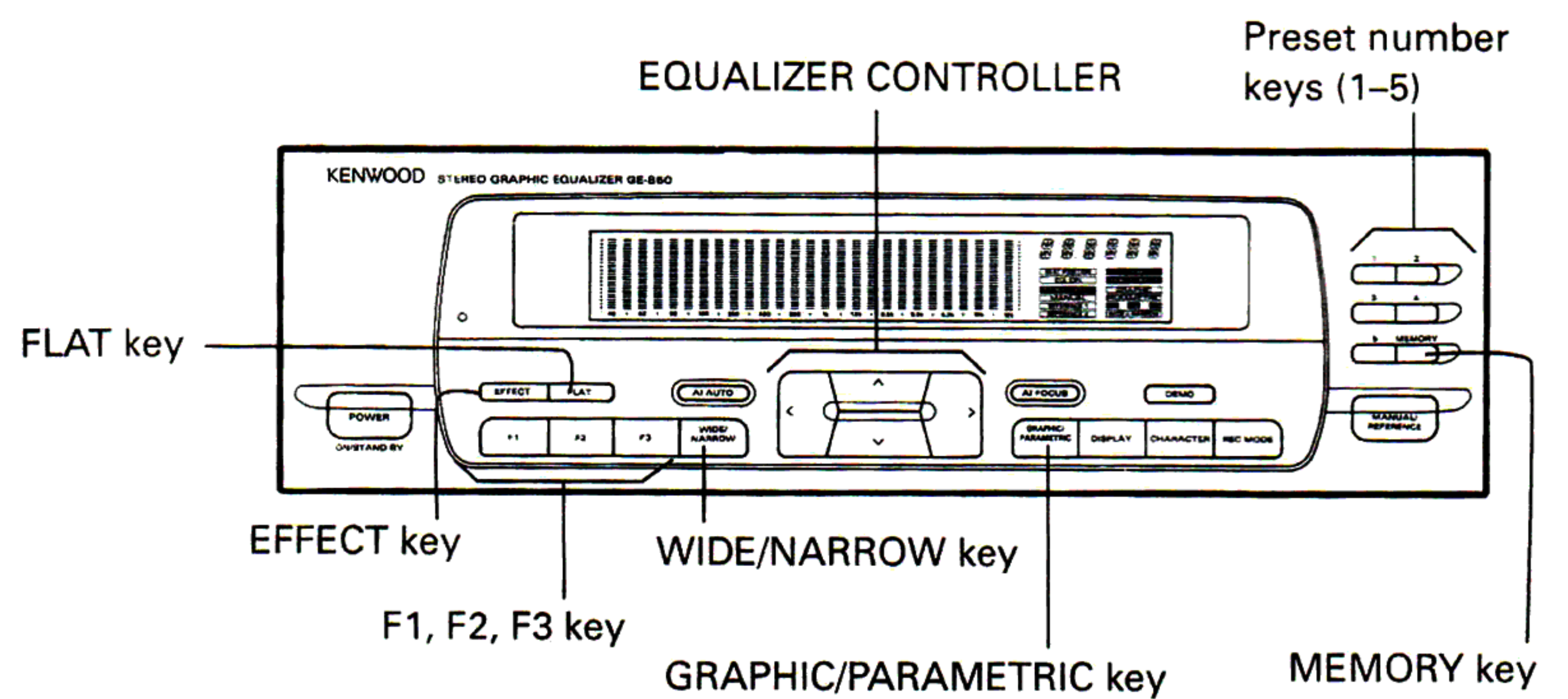
### 6 When the adjustments of ranges F2 and/or F3 are also required, repeat steps 3 to 5 for each of them.

- When two or three curves have been set, the overall curve obtained by combining them is displayed in a few seconds.



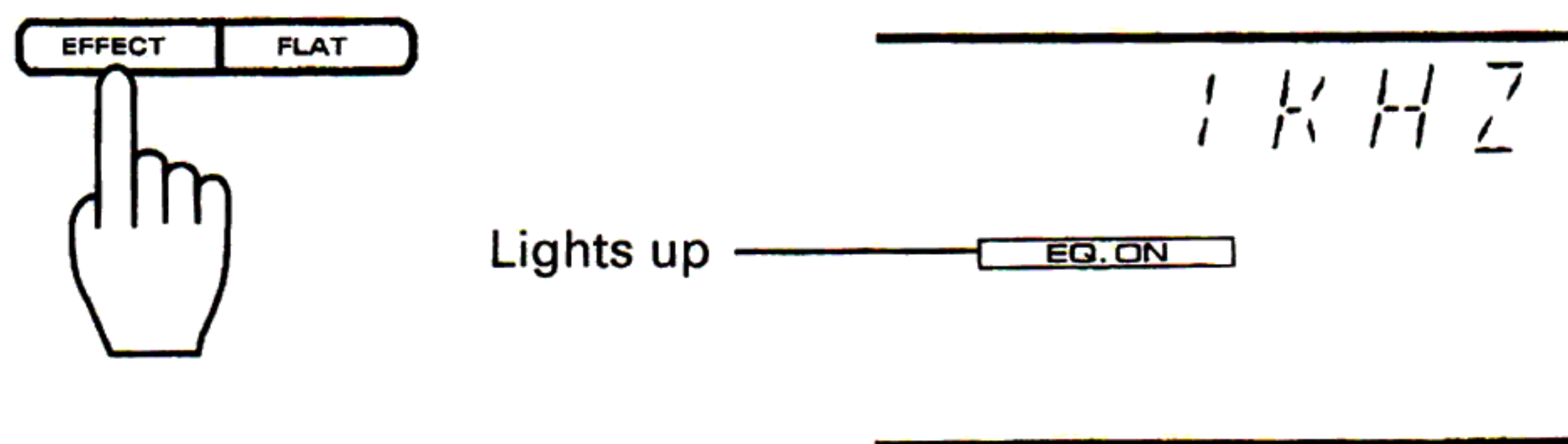
- For finer adjustment, perform the Graphic mode operation described in the following page.



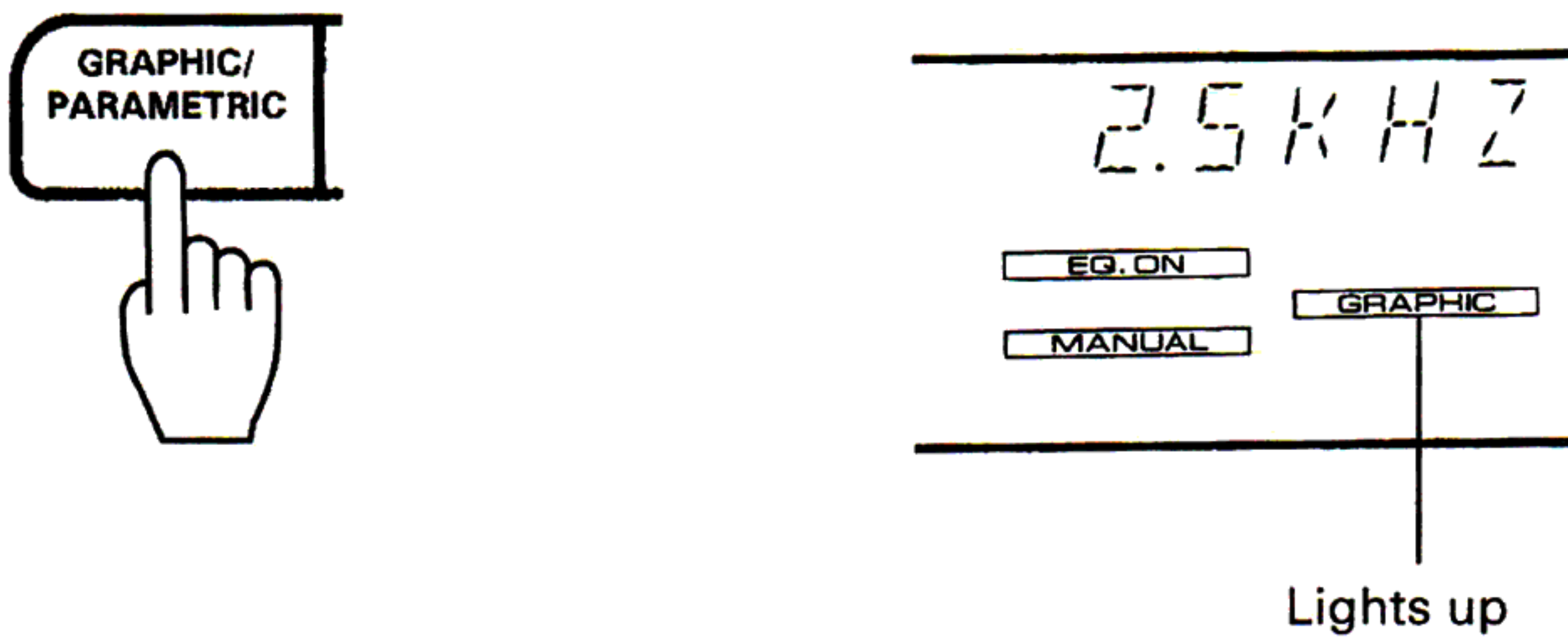


## ■ Fine adjustment of each frequency band (Graphic mode)

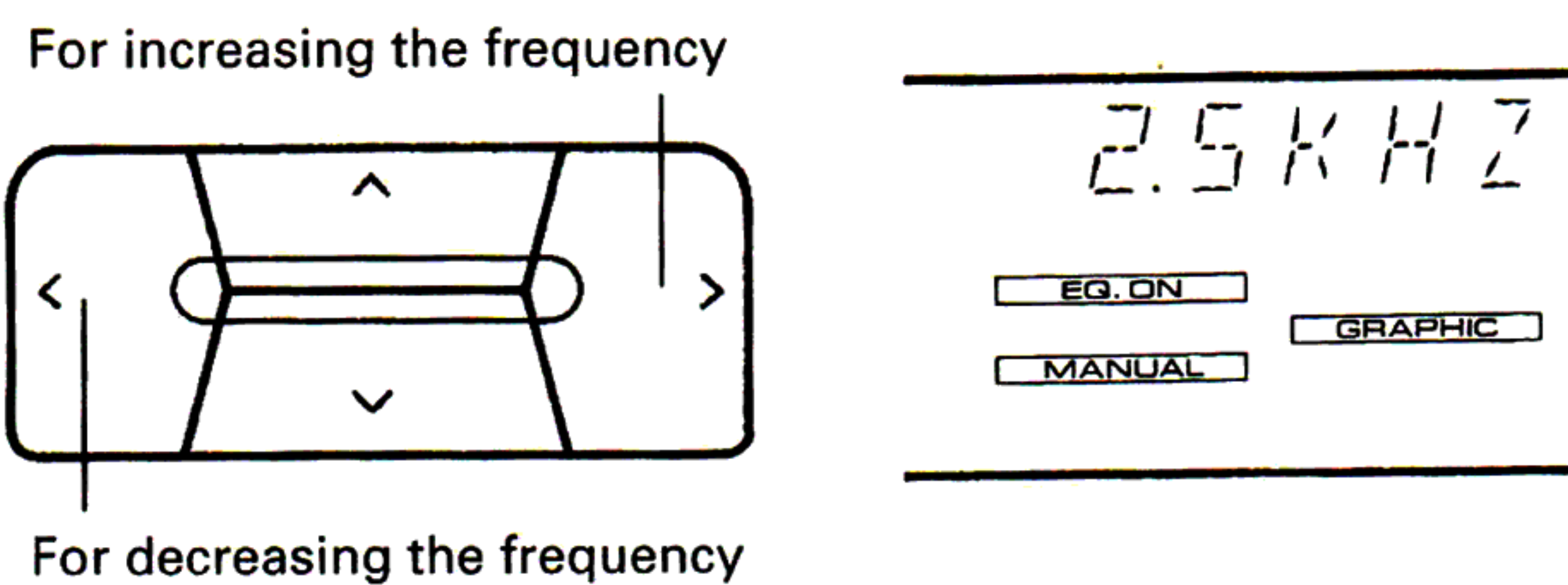
### 1 Set to the equalizer mode.



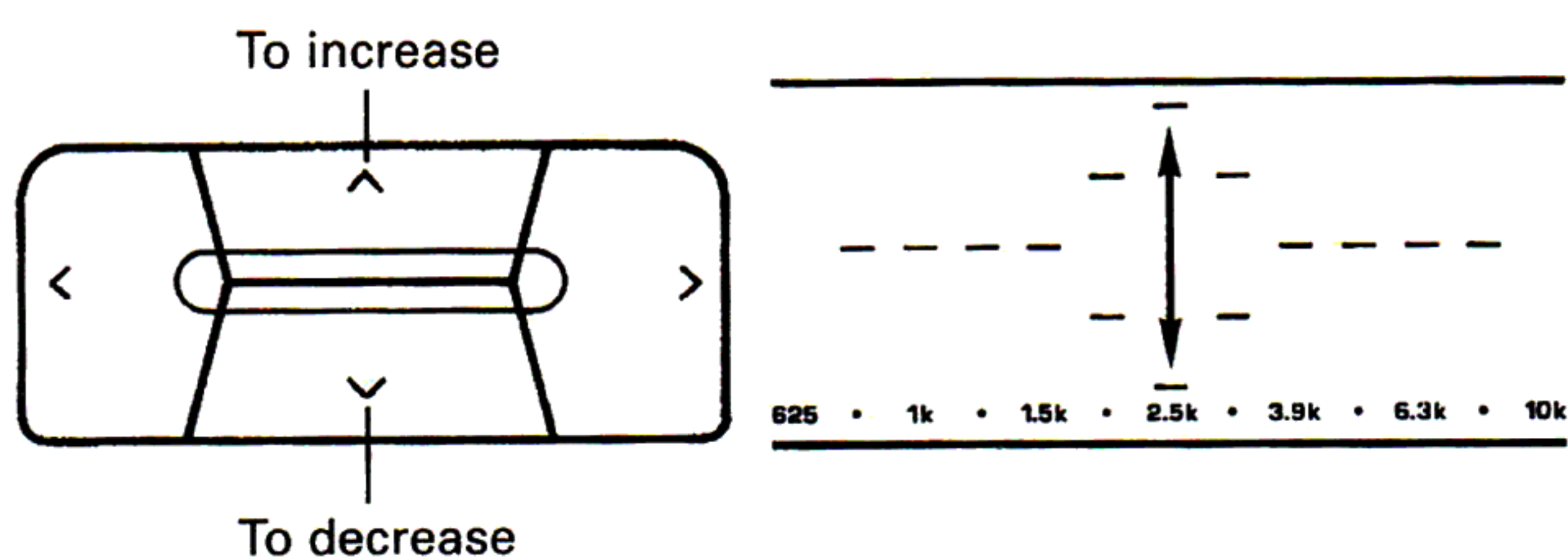
### 2 Select the Graphic mode.



### 3 Select the frequency band to be adjusted.



### 4 Adjust its level.



### 5 For each frequency band to be adjusted, repeat steps 3 and 4 above.

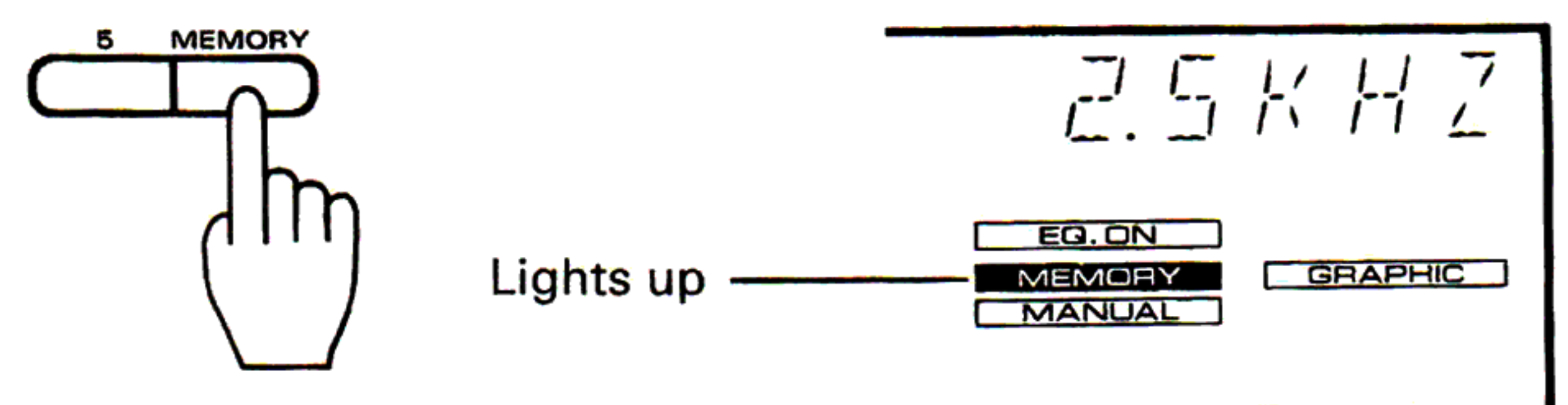
## ■ User-preset of user-created pattern (M-1 to M-5)

### 1 Create a desired equalizer pattern.

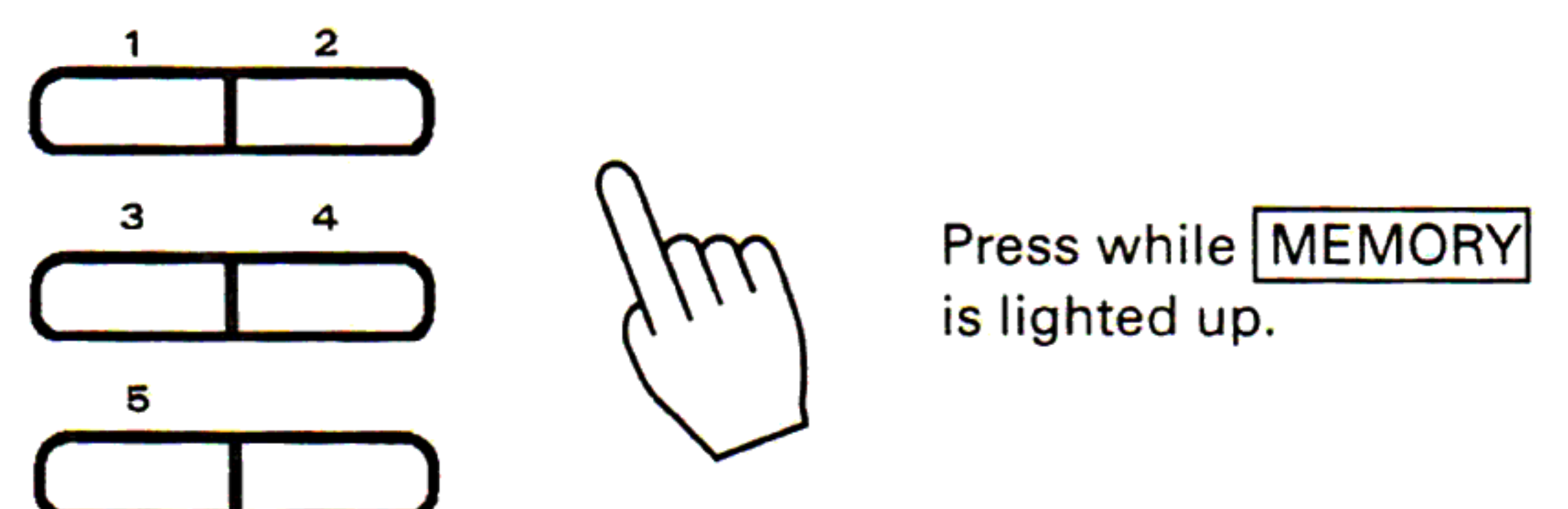
- Any equalizer pattern can be preset if it is being displayed.
- The pattern cannot be preset during operation of AI AUTO or AI FOCUS.

### 2 Preset the equalizer pattern in the manual memory.

#### ① Press the MEMORY key.



#### ② Press one of the preset keys.



- Pattern is preset under the number of the numeric key pressed.
- Up to five patterns can be preset in the same manner.
- When a pattern has previously been preset under the numeric key pressed, the newly preset pattern replaces the previous pattern.

To return to the initial pattern (factory-preset patterns M-1 to M-5 on page 13) by clearing the user-preset pattern:

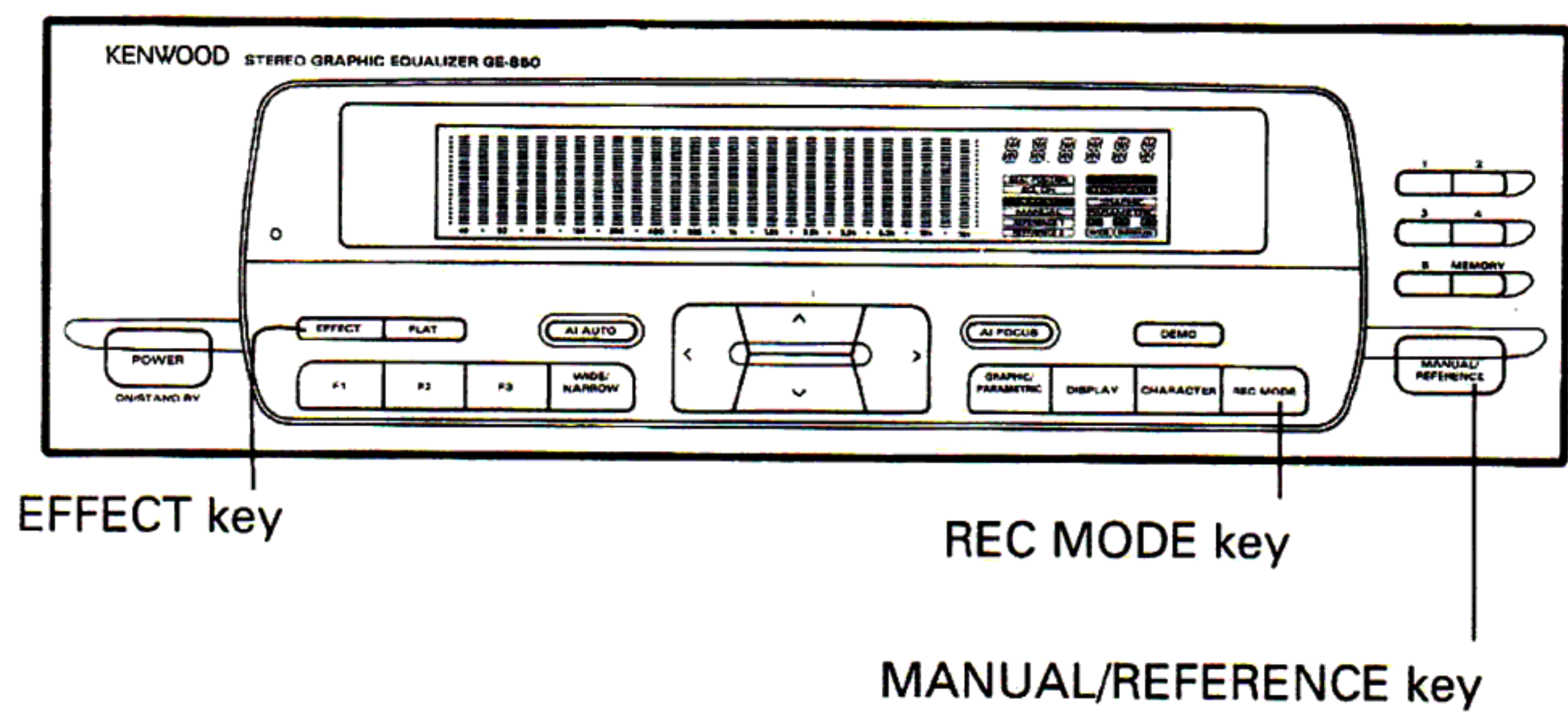
Press the preset key where the pattern to be cleared is preset for more than 5 seconds.

Note:

If the mode is switched from "Graphic" to "Parametric", the equalizer pattern created in the Graphic mode is cleared.



# Recording sound with equalizer effect

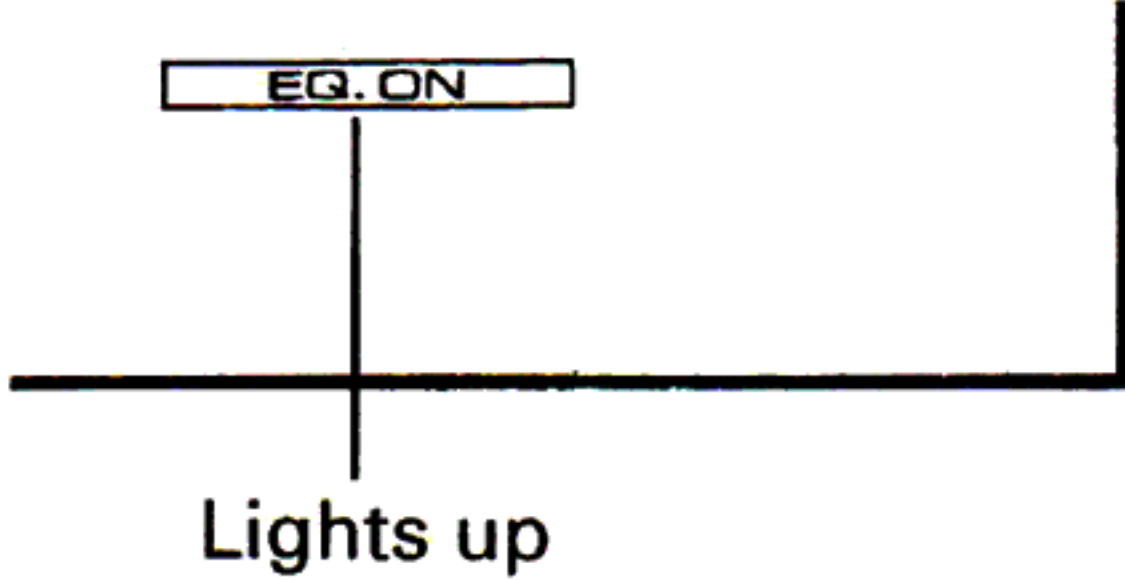
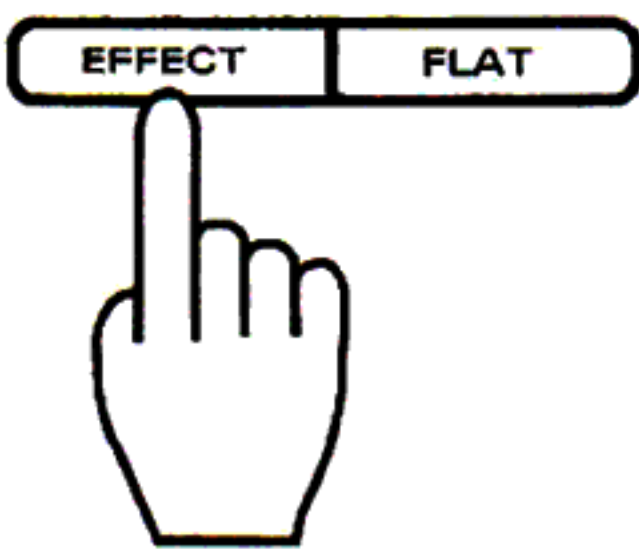


## ■ Operation of REC MODE

Use this mode when recording a tape to be played back on a car stereo or a headphone stereo.

**1** Play a music source.

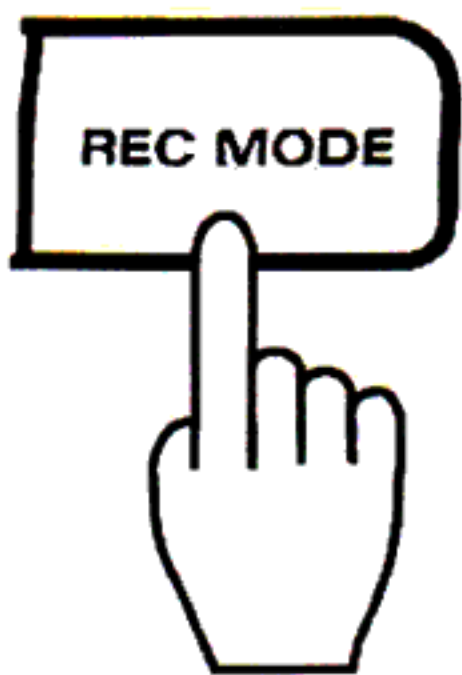
**2** Set to the equalizer mode.



**3** Select a desired pattern.

- Refer to pages 10 to 15.

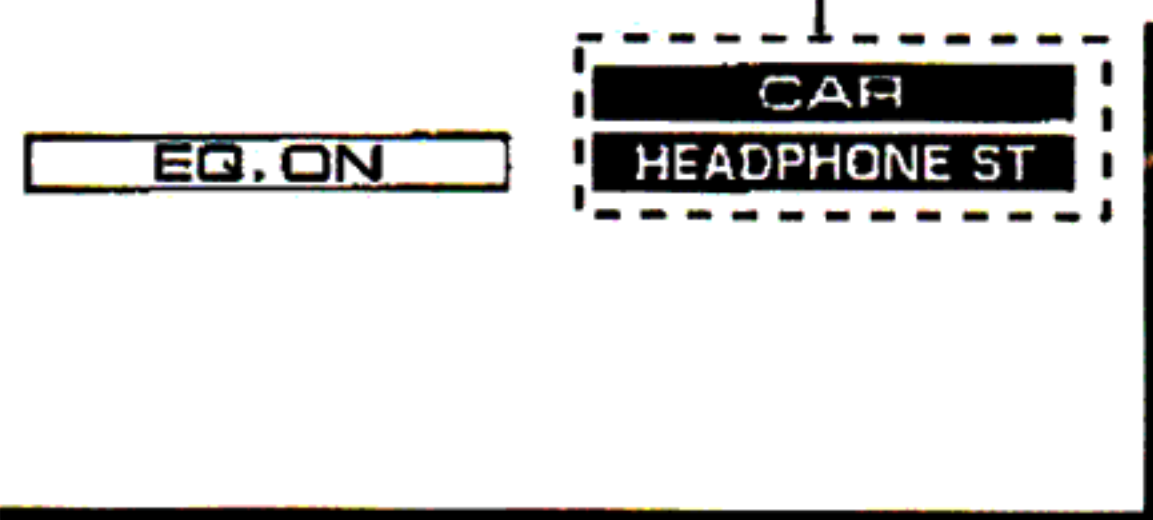
**4** Select the REC MODE.



Each press switches the REC MODE content.

CAR: Recording for playback on car stereo  
HEADPHONE ST.: Recording for playback on headphone stereo  
OFF (indicator extinguished): Curve before the REC MODE was activated

The indicator corresponding to the selected REC MODE lights up.



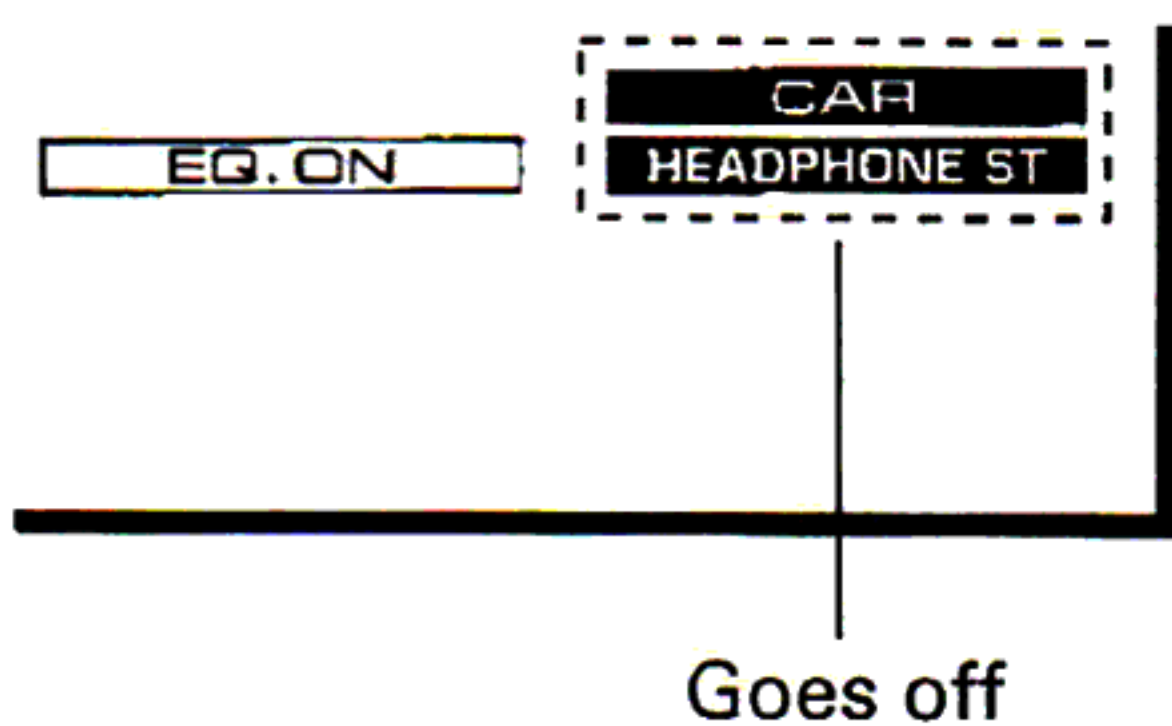
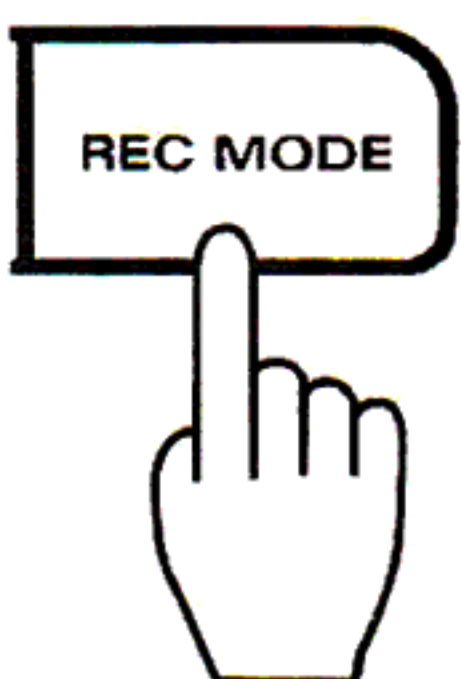
- The equalizer pattern being selected will be combined with the car stereo recording pattern or headphone stereo recording pattern.
- Select OFF (indicator extinguished) when the unit is used as an ordinary equalizer or for general recording for other tapes than those played on a car stereo or a headphone stereo.

**5** Start recording.

- For details, refer to the instruction manual of the KENWOOD MIDI system.

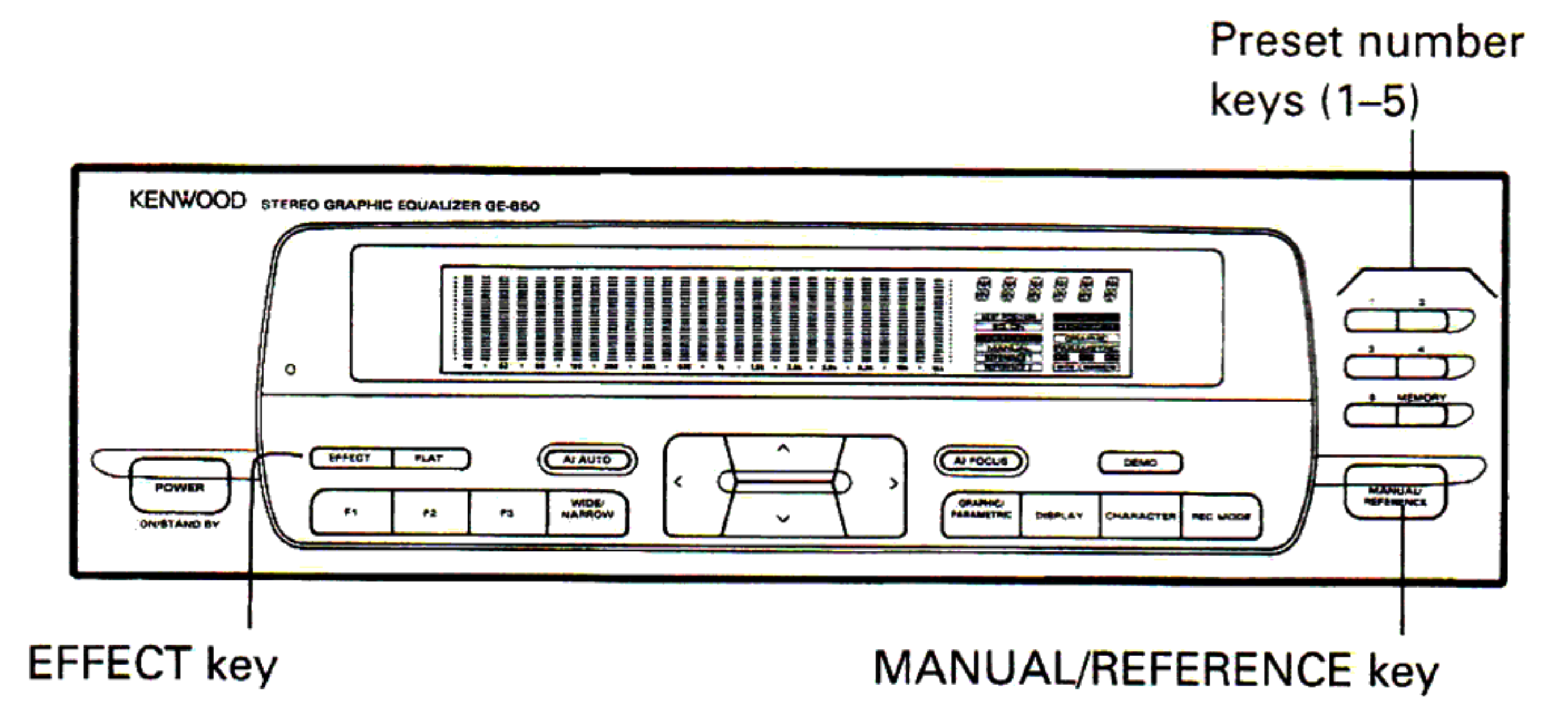
### To cancel REC MODE

Press the key to select OFF (indicator extinguished).



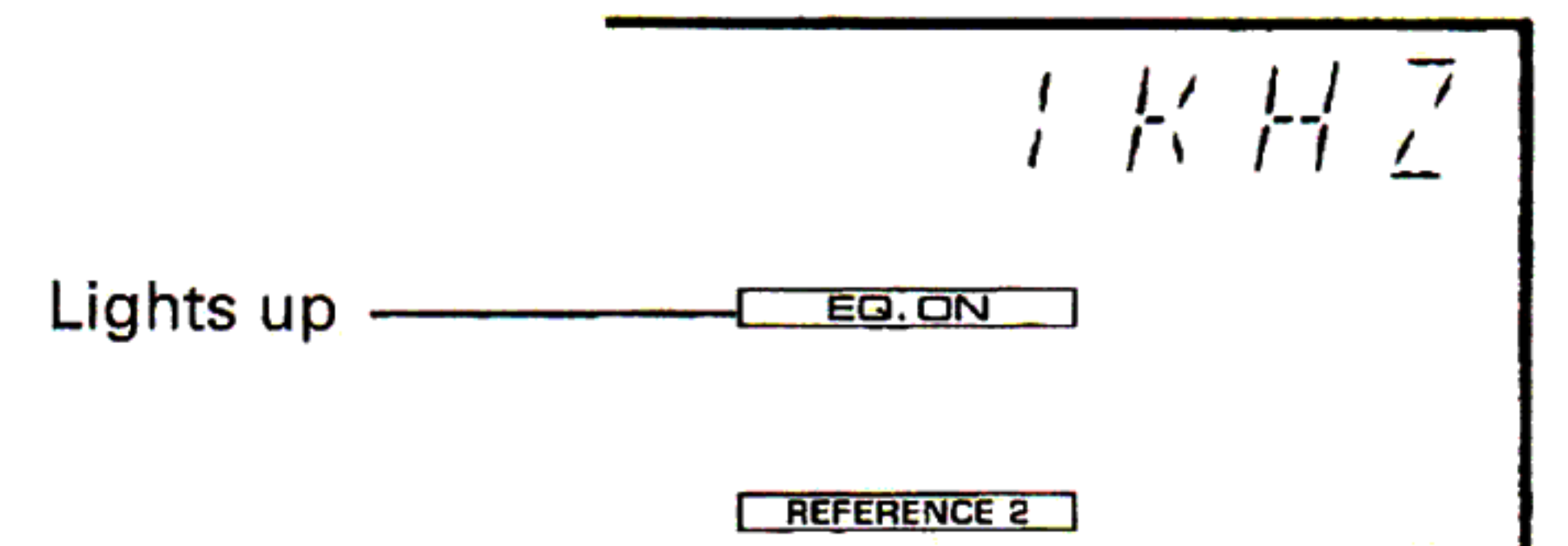
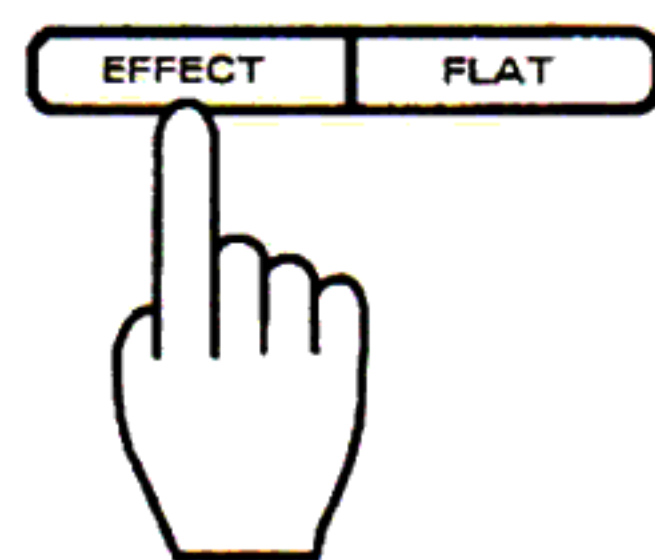
- The pattern before the REC MODE was activated is displayed again.



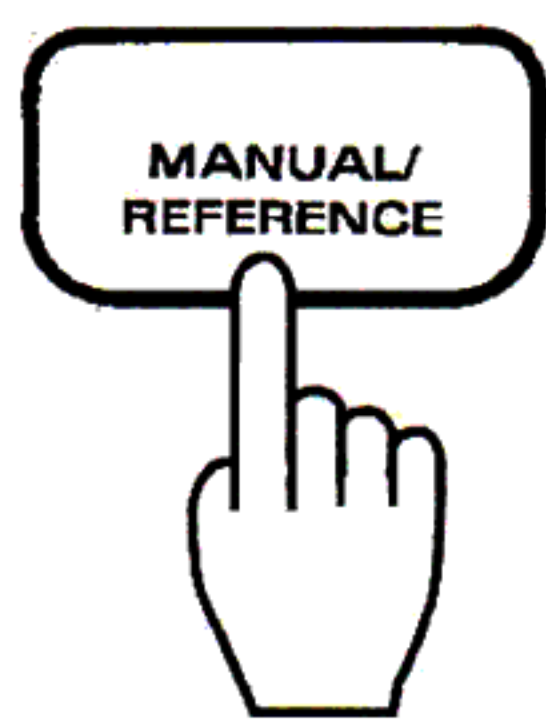


## ■ Double-speed-recording of CD with equalizer effect

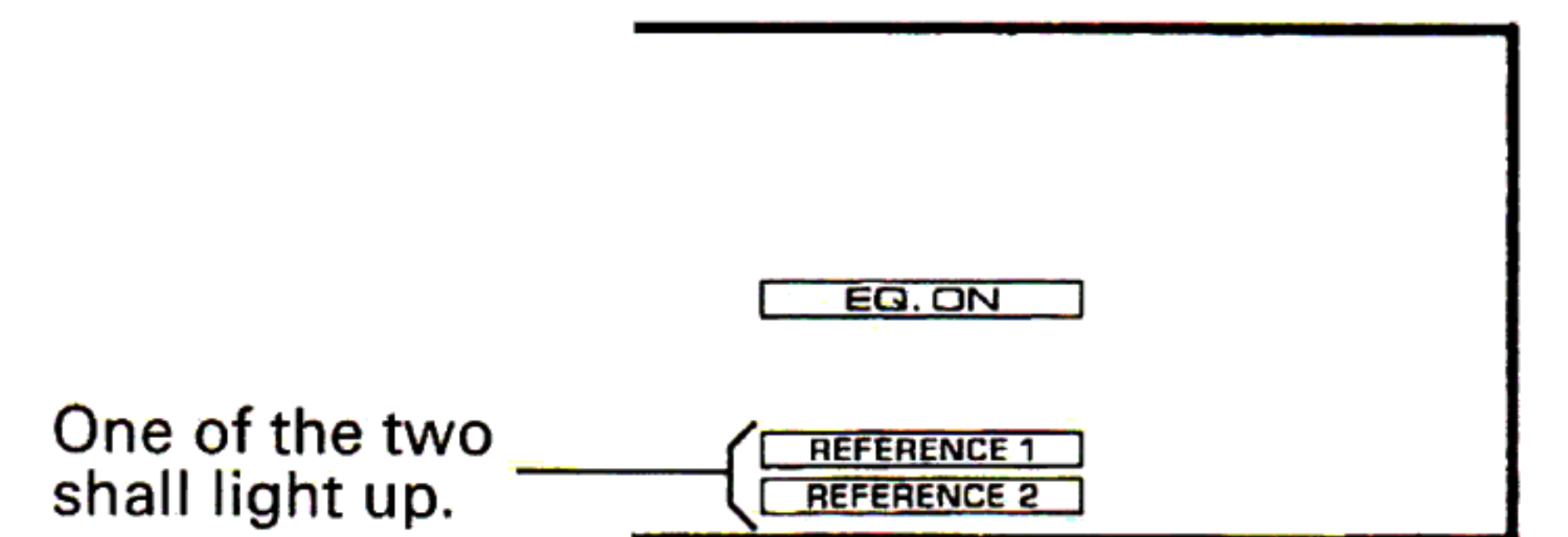
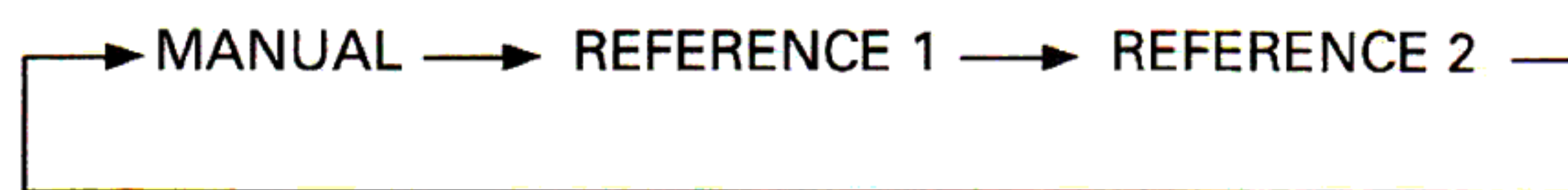
### 1 Set to the equalizer mode.



### 2 Enter the REFERENCE 1 or REFERENCE 2 mode.

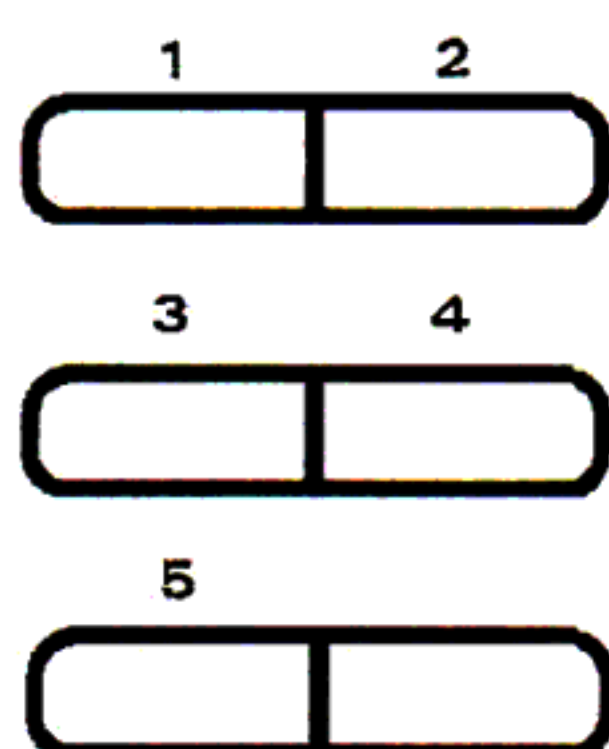


Each press switches the modes.



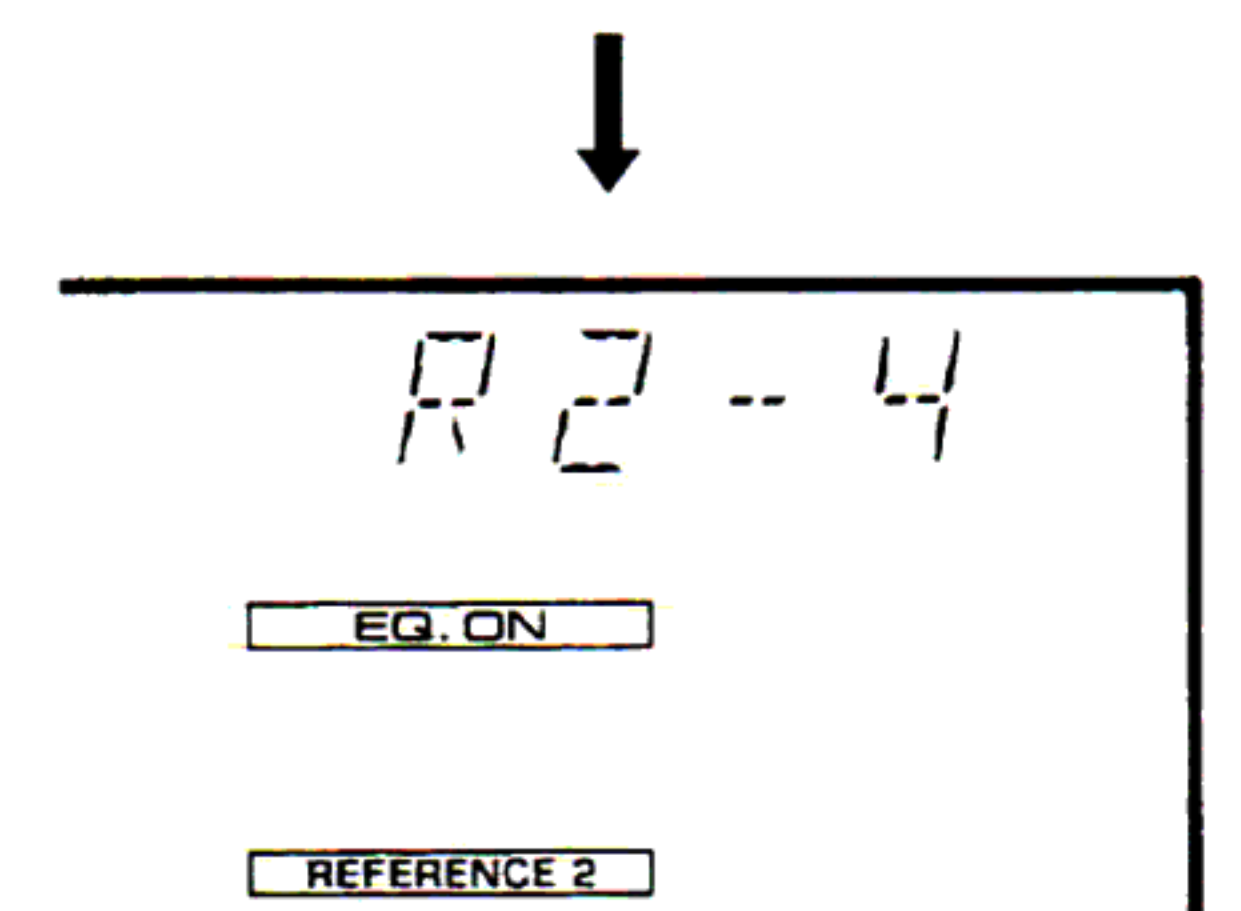
### 3 Select a reference equalizer pattern.

Select one of "R1-1" to "R2-5".



Example: To select R2-4 in the REFERENCE 2 mode, press "4" once.

Example: when "4" is selected in the REFERENCE 2 mode.

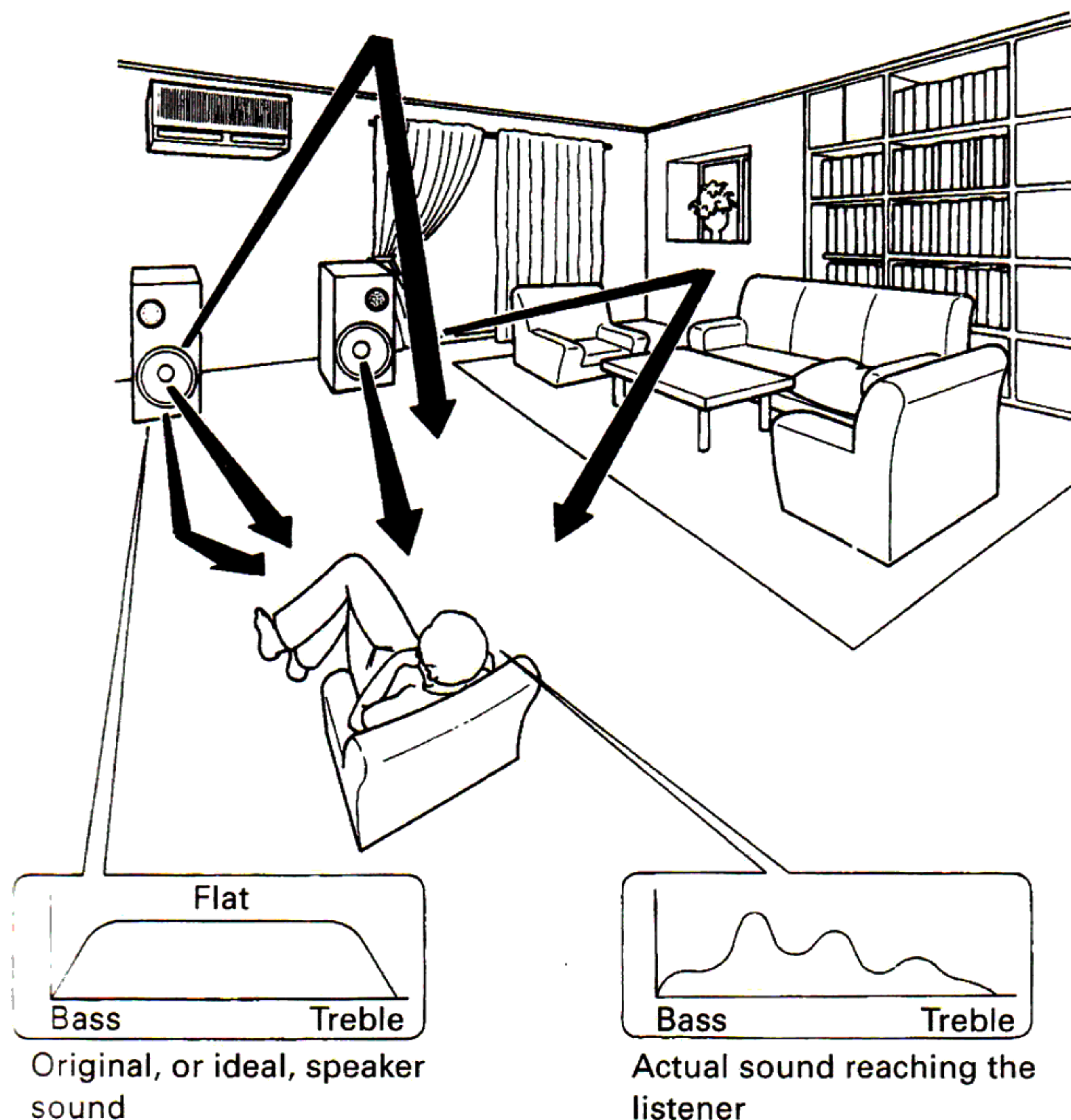


### 4 Start double-speed recording.

- For details, refer to the instruction manual of the KENWOOD MIDI system.



## Functions of graphic equalizer



### Compensation for the audio characteristics of the listening room

The listening room may contain several objects. Some of them reflect sound and some absorb sound, thus the sound reaching your ears is considerably affected by these objects. In such cases, the graphic equalizer can be used to adjust the frequency response of the room for a flat response from low to high frequencies.

- Low frequencies are absorbed by beds, chairs, etc.
- High frequencies are absorbed by curtains, screens, etc.
- The room structure can cause the low frequencies to be unclear, or the sound level to increase or decrease depending on the frequency.

### Adjustment of sound to your individual taste

When the reproduced sound contains several musical instruments and voices, the graphic equalizer allows you to enhance or attenuate the sound of specific instruments or voices.

## Sound equalization

### Super bass range (40 Hz, 63Hz)

When this control is moved up, the bass instrument (double bass, bass drums, or pipe organ, etc.) sound is increased. When the super bass sound is boomy, move this control down.

### Bass range (98Hz, 160 Hz)

Usually, the listening room resonance frequency is in this range. To eliminate bass resonance, move this control down.

### Mid-bass range (250Hz, 400 Hz)

This range is the basis of music. Whether the sound is rich or not, depends on this range. When the playback sound is not so good, move this control up.

### Mid range (625Hz, 1 kHz)

When this control is moved up or down, the baritone or soprano voice is emphasized/de-emphasized. This range is related to the "presence" of music.

### Mid-high range (1.5kHz, 2.5 kHz)

This range is related to stimulus and metallic sound. When this range is well compensated, vivid sound can be obtained.

### High range (3.9kHz, 6.3 kHz)


This frequency range is related to the hardness of the sound. When this control is moved up, strings or brass instruments, such as flutes or piccolos, are emphasized. When the control is moved down, the sound will be more soothing.

### Super high range (10kHz, 16 kHz)

This frequency range is related to the details of the music. When this control is moved up, super high frequency instruments, such as triangles or cymbals, are emphasized, resulting in wide sound and echoes.



## In case of difficulty

 **Caution:** Read this page carefully to ensure safe operation.

**What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.**

Symptom	Cause	Remedy
<b>Power fails to turn on.</b>	<ul style="list-style-type: none"> <li>● Poor connection of the power cord plug.</li> <li>● The power cord plug is connected to the SWITCHED outlet of the amplifier, and the power switch is turned off.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the power cord plug securely.</li> <li>● Turn on the power switch of the amplifier.</li> </ul>
<b>Sound is not output.</b>	<ul style="list-style-type: none"> <li>● The input and output connections are reversed.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the input and output correctly.</li> </ul>

Notes:

1. This system is microprocessor-controlled, so malfunction may occur due to external noise or interference noise. In such a case, unplug the power cord, plug it and turn power on again.
2. Do not use contact cleaners because they could cause a malfunction. Be especially careful against contact cleaners containing oil, for they may deform the plastic components.

## Specifications

## Performance

Equalizer characteristic variable range .....	±12 dB
Center frequencies (Hz) .....	40, 63, 98, 160, 250, 400, 625, 1 k, 1.5 k, 2.5 k, 3.9 k, 6.3 k, 10 k, 16 k
Total harmonic distortion (at 1kHz, flat) .....	0.006%
Gain .....	0 dB
Signal to noise ratio (IHF'66) .....	100 dB
Input impedance .....	47 kΩ
Output impedance .....	2.2 kΩ

## General

<b>Power consumption</b> .....	<b>19 W</b>
<b>AC outlets (except for Australia)</b>	
<b>UNSWITCHED</b> .....	<b>1 (200 W max.)</b>
<b>Dimensions</b> .....	<b>W: 360 mm</b>
	<b>H: 109 mm</b>
	<b>D: 361 mm</b>
<b>Weight (Net)</b> .....	<b>3.4 kg</b>

Note:  
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.



**Note:**  
The unit's power supply is secondarily connected. Note following.  
The unit is not completely disconnected from the mains as long as the power cord is connected to a wall outlet.

**Observera:**  
Apparatens strömförsörjning kopplas från sekundärt. V.g. ge akt på följande.  
Apparaten fränkopplas inte helt och hållet från strömnätet medan apparatens nätsladd är ansluten till växelströmsuttaget.

**Huom:**  
Virta yksikköön on kytketty pois sekundaaripuolelta.  
Huomioi seuraava.  
Tämä yksikkö ei ole kokonaan kypketty pois pää virranjakajasta kun pää katkaisin on liitettyä virtatiiriin.

**Bemærk:**  
Strømmen til apparatet afbrydes på den sekundære side. Vear opmærksom på følgende.  
Denne enhed er ikke fullstendig koblet fra lysnettet så lenge stikket er tilsluttet stikkontakten.

**Anmerkning:**  
Strømmen til apparatet er slått av på sekundærsiden. Vær oppmerksom på det følgende.  
Dette apparatet koples ikke fullstendig fra nettet så lenge støpselet står i en stikkontakt, selv om strømbryteren settes i av-stilling.